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IDAHO.

THE

Canadian Horticulturist

VOL. XII. *JANUARY*, 1889. NO. 1.

For THE CANADIAN HORTICULTURIST.

1889

ANOTHER year! ah me!
Has cycled into Eternity.
Anon, as we its requiem sing,
We hear the shout, "God bless the King,"
The new born infant, Eighty-nine—
The old hath fled in the mist of time.

Now let us happy be, in the dear old way,
Revelling in affection's voice to-day;
Oblivious of our heritage of sorrow,
Leave life's dark combat till to-morrow,
Give withering care into the hands divine
(A happy, trusting heart, has fadeless prime.)

Tho' snowflakes gather high and cold,
We'll joyous be, as in days of old.
While seated round our well piled fire,
Let faith see our Eternal Sire,
As gushing up from Memory's spring,
We trace His bounteous hand, and softly sing

The oft-repeated, oft-forgotten chant,
"The Lord's my Shepherd, I shall not want."
Let sunshine fill our souls anew,
And bid each thankless sigh adieu,
Pray God for peace of mind and spirit clear,
And with that boon, He'll grant a smiling year.

GRANDMA GOWAN.

MONT ROYAL VALE, *December*, 1888.

THE IDAHO PEAR.

DURING the past year we have seen a great many notices of this pear. Most of our horticultural exchanges have given it great prominence, and many of them engravings of it; and since there is such a universal chorus of laudation from all sides, our readers will soon be accusing us of ignorance if we do not join. We have, therefore, had a colored plate of the Idaho pear printed for our January number.

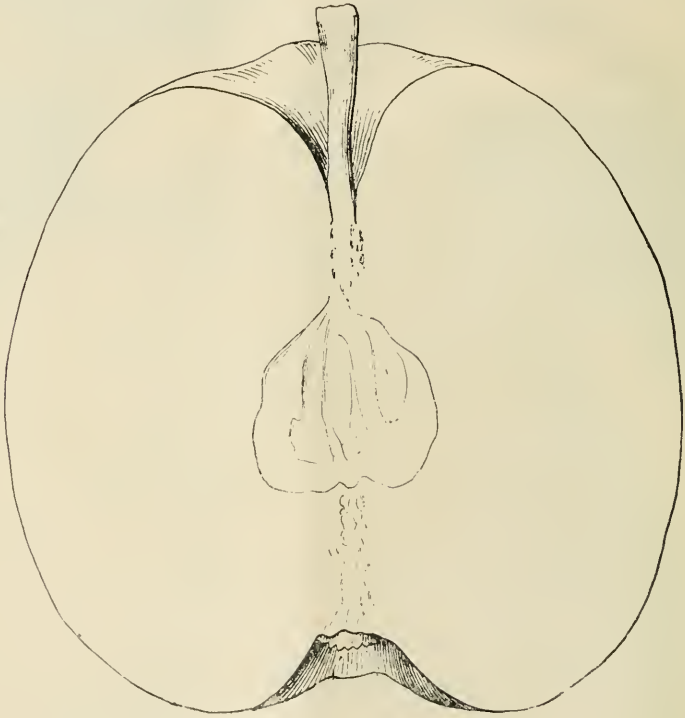

Fig. 1.—The Idaho Pear. Cross Section.

The Idaho pear originated in the northern part of the Territory of Idaho, whence its name. It was first noticed as the Mulkey pear, after a Mrs. Mulkey, of Lewiston, to whom belongs the credit of raising it from a seed sown some twenty years ago. The general form and coloring of the fruit is well shown in our illustrations; and it is further described as follows:—"Cavity very irregular; basin shallow and plaited; calyx very small and closed; core very small; skin golden yellow, with many russety dots; flesh melting, juicy, with a sprightly, vinous, delicious flavor; season, September and October." The season of ripening is about a month later than the Bartlett; it is a much better keeper.

In fig. 1. we show an outline of a cross section of the Idaho pear, showing the small size of the core, which is almost seedless. Although the exterior is somewhat coarse in appearance, like the Duchess, the flesh is fine, smooth, and free from granulations.

The tree is a good grower, we are told, but inclined to overbear; yet even without thinning, the pears grow to average

from ten to fifteen ounces in weight, and specimens have been grown weighing over twenty ounces. It has not yet been fruited outside of Idaho, and therefore its suitability for Canada is only conjectural. We may, however, safely infer that it is hardy when we consider that Lewiston is in latitude 46° north.

DUCHESSE D'ANGOULÊME.

THIS magnificent French pear is too well known among our leading fruit growers to need any introduction here. For years past this and the Louise Bonne de Jersey have been planted as the two leading varieties of fall pears, and have been crowded into our city markets in October and November. One thing at least has been learned of late concerning the marketing of fruit, viz., that, as a rule, the best time for the sale of fruit is just when it is in the best condition, both as to appearance and quality. Some of us attempted one season to keep the Duchesse for marketing at Christmas time; it was beyond their proper season a long way, and though with care they were preserved fairly well, the demand was scarcely as good as in October. Generally speaking, this pear should be marketed before the middle of November if in baskets, and in October if in barrels.

FIG. 2.—A BUSH PEAR TREE (DUCHESSE D'ANGOULEME).

Pears weigh one-third heavier than apples for the same bulk, and therefore, especially for such large kinds as the Duchesse, the half-barrel or keg is much preferable to the barrel; it is so much more easily handled, and will command a better price in proportion.

Grown on standards the Duchesse is somewhat uncertain, both in size and quality; but grown on dwarf trees it is most delicious and of the best quality, and certainly an honor to the Duchesse d'Angoulême of France, even if it was a seedling found in a hedge near Angers. Probably no pear will better respond to liberal culture than it does; and a liberal cutting back of a portion of the new growth often results in the production of samples over one pound in weight. Indeed, we have found that in the case of dwarf trees of some age, which were bearing small and knotty fruit, a wholesale cutting back of the old wood was most beneficial, resulting in a vigorous young growth, and consequently in fruit of much improved form.

We reproduce from *The Garden* an engraving of a new style of training dwarf pear trees, which is now being adopted in England with considerable success. It is bush form of training, the trees branching at the ground and not being allowed to form any trunk. In this way they may be planted at a distance of six feet apart, and kept so low that no ladders are required in gathering the fruit. Trees thus grown have produced a prodigious crop in the Royal Horticultural Society's garden at Chiswick, near London. Another advantage of this mode of culture was observed in this, that very little damage was done these trees by storms, while standards were half-stripped of their fruit by high winds.

SOME PROMINENT CANADIAN HORTICULTURISTS.—VI.

REV. ROBERT BURNET.

THOSE of us who were in attendance at the meetings of our Association during the years from 1869 to 1879 will recognise in the accompanying steel engraving the genial face of one who, during those years, filled the presidential chair with distinguished ability, characterized by geniality of manner; his warm greetings were always appreciated by us as he welcomed us to the meetings; and his vivacity gave great liveliness to the discussions, while his manner of eliciting information from each one present was eminently successful.

Regarding the life of the Rev. Robert Burnet, we have only a few bare facts at our command from which to compile this sketch. His father, James Burnet, and his progenitors for five generations, were natives of Ladykirk, Berwickshire, Scotland; he was a lineal descendant of the Burnet family, who, for five hundred years, were millers in Neustead Mill, and afterwards in Tweed Mill, as published by Dr. Chalmers in a volume of his "Miscellany." His mother was Elizabeth Blair, daughter of David Blair, once tacksman of the Home Farm, Floors Castle, Roxburghshire.

Robert Burnet

Robert was licensed to preach the Gospel, and ordained by the Presbytery of Fordown, and immediately afterwards volunteered as a missionary to Upper Canada, as Ontario was then called; although strongly urged by the Rev. Dr. McFarlane, then Moderator of the General Assembly, to go to India as headmaster of the Assembly's school there, and to act as chaplain of the forces.

For twenty-six years the Rev. R. Burnet was minister of St. Andrew's Church, Hamilton, during which time he took a special interest in horticultural and agricultural pursuits. In 1869 he was elected President of the Fruit Growers' Association of Ontario at the annual meeting held in London, Ont., on the 22nd September, in which office he succeeded W. H. Mills, Esq., of Hamilton. His able conduct of the meetings during his ten years of office have already been alluded to, and his valuable annual addresses form an important feature in the reports of the Government of those years.

In 1880 Mr. Burnet removed to Pictou, Nova Scotia, where he ministered for four years in St. Andrew's Church, and then returned to Ontario.

In addition to the above we may remark that the subject of our sketch was a life member of the American Pomological Society, of which he was for a time one of the Vice-Presidents; and honorary member of the Massachusetts Horticultural Society.

From his quick perceptions in the identification of fruits, and of their comparative excellences, he is frequently employed as judge in the horticultural department at fairs, and these duties he creditably discharges.

A FEW HINTS ON LANDSCAPE GARDENING.

WE make no attempt at the treatment of this interesting subject from a professional standpoint. We only propose giving, in a simple manner, a few important points concerning that department of landscape gardening which deals with the laying out of lawns and of ornamental grounds, hoping our remarks may be useful to those of our readers who may be planning improvements in the surroundings of their homes, to be carried out when spring again comes round.

We want to cultivate a taste for the beautiful, in the arrangement of the grounds around our country homes; a taste that is sadly deficient in many quarters, as is evidenced by the untidy and unkempt appearance of many of the door-yards belonging even to some of our prosperous farmers.

Generally speaking, we find two sacred enclosures in front of the house, each surrounded by a picket fence, one of which is the door-yard and the other the garden; and, on either side of the house, barns, corn-cribs, pig-pens, etc., reign supreme. The door-yard, as it is indeed aptly called, is sometimes planted regularly, like an orchard, with maples or spruces, and has a front walk directly across the middle, just wherever the course of human feet have worn it clear of grass.

What is to be done in such a case? Why, begin *de novo*, to be sure; tear away these ugly division fences; group all out-houses as much as possible about the barn in the

rear, concealing them with groups of ornamental trees, and then proceed to lay out walks, and drives and to plant trees according to some definite plan. The winter is the best time for drawing out such a plan on paper, and therefore the following remarks.

To illustrate our subject we present our readers with a series of engravings, representing Ashton, the country seat of H. Maunsell Shieffelin, of Yonkers, N.Y. The plain Italian style of the house sets off to the better advantage the great importance of well-planned surroundings for producing elegance of effect. No division fences are observable, unless far back in the rear; the groups of trees are a beautiful setting to the picture, while the closely-shaven lawn in front is an adornment too little valued by those who spade up a portion of the front grounds for the growing of annual flowers.

The pathway, which too often cuts the front lawn in halves, is here made to skirt along the border, under a pleasant shade, and to approach the front door by a graceful curve.

The absence of shrubbery about the verandah and sides of the house is also observable, in contrast with the vulgar custom of planting beds of shrubs and perennial flowers to grow along the sides of the house. Instead of this, the closely-shaven lawn up to the very walls is in much better taste, the shrubs being grouped in some more appropriate places.

The climbers about the posts of the verandah are also worthy of our attention, for they lend a grace and charm which no architectural ornament could impart. There are a

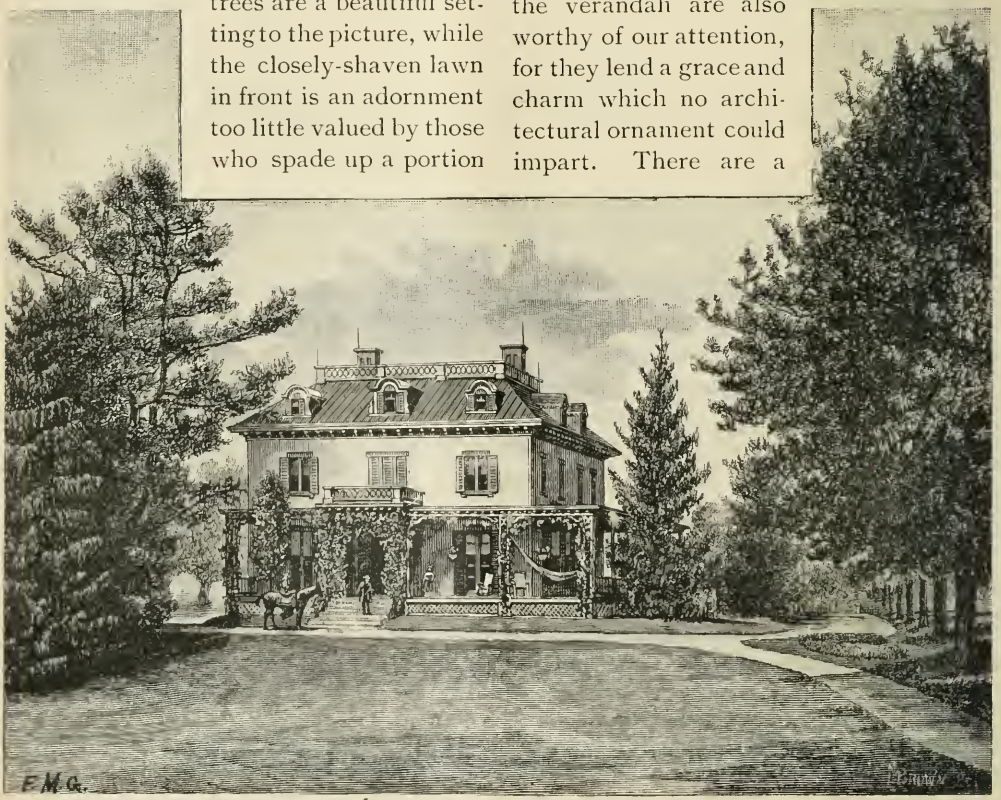

Fig. 3.—Ashton; The Residence of H. Maunsell Shieffelin, Yonkers, N.Y.

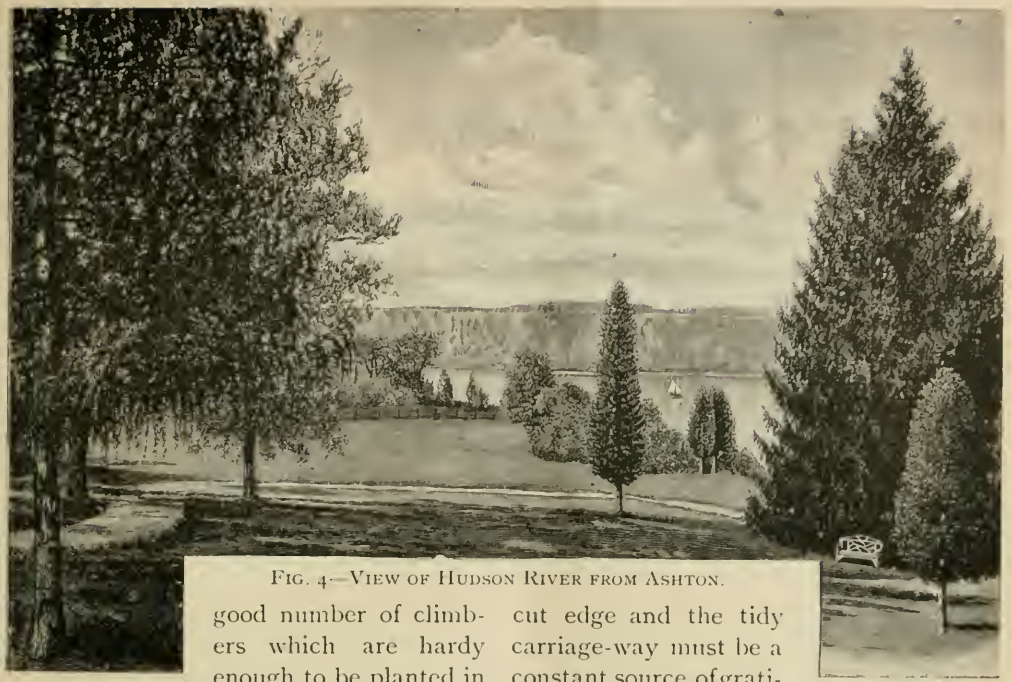

FIG. 4—VIEW OF HUDSON RIVER FROM ASHTON.

good number of climbers which are hardy enough to be planted in Ontario, among which may be mentioned, for the benefit of amateurs, the Virginia Creeper, and many varieties of the Clematis, Honeysuckle and Climbing Rose. These trained to twine about the pillars of the porch, or to cover the bare walls of the house, make a most appropriate ornament. The Japan Ivy *(Ampelopsis Veitchii)* is unequalled for covering a stone or brick wall, for it needs no support, and it takes on the most splendid tints in autumn; but we have not included it in the above list because, although it succeeds south of Toronto, we have not as yet had it thoroughly tested north of that city.

A delightful feature in this country seat is the grand avenue shown in fig. 5. The grass borders here do not need to be so closely-shaven as upon the front lawn, but the evenly cut edge and the tidy carriage-way must be a constant source of gratification to the owner, as well as a great attraction to every visitor. The common fault in planting ornamental trees along a roadway is in placing them too near to the walk or drive, forgetting the spreading branches of future years. In the engraving this fault is avoided, and the trees are kept at a respectful distance from the drive-way.

We wish to call the attention of our readers to another important point in the grounds at Ashton. Too often in laying out the plans for our ornamental grounds we forget the charm of a distant prospect, and thoughtlessly hide from view by dense maples or spruces, some beautiful view of mountain, river or lake; or, perhaps, the spires of a town nestled away in a picturesque valley. This has been carefully guarded against at Ashton, where

that side of the grounds which faces the majestic Hudson has been sparingly planted with just enough of trees and shrubs to set off the magnificent view by partial concealment.

Frequently, too, we see rustic seats in variety disposed upon the verandah, or in proximity to the house. This, too, is in bad taste, for they do not accord with the correct lines of architecture which characterize the carpenter's art, but rather with the irregularity of nature; consequently they are only in place in some retired nook of shrubbery. In our illustration they add very much to the interest of the scene.

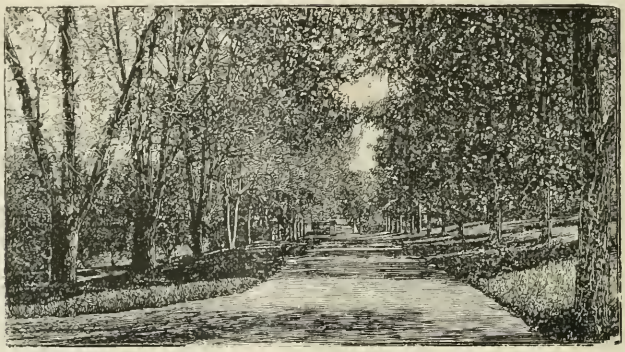

Fig. 5.—Grand Avenue.

In a future number we will give some further hints which may be useful to those of our readers who wish to improve their homesteads without calling in the services of a landscape gardener.

THE APPLE MAGGOT.

THE Report of the Maine State Pom. Society for 1887 reports that this insect is on the increase in that State. The varieties mostly affected are the early varieties, and of these chiefly the sweet and sub-acid ones.

The scientific name of this maggot is *Trypeta Pomonella*, and it is wholly distinct from the Codling Moth, of which the life-history has been frequently illustrated. The former is, if anything, the more destructive, because it eats through the skin of the apple and feeds upon the pulp, tunneling it in every direction, avoiding the core, thus rendering the fruit wholly unfit for use; and because as yet no ready means of destroying them have yet been discovered.

Fig. 6 represents the adult insect, a small black fly, here considerably magnified, of which the head and legs are of a rust-red color, the wings have peculiarly-shaped black bands, and the abdomen has white bands. The length of the body of the male

is 1-5 inch. The fly appears in the latter part of summer, and deposits its eggs, which soon hatch out into a small footless larva, from ·19 to ·27 inches in length, of yellowish white

Fig. 6.

or greenish tinge. At that time of the year the application of Paris green would be unsafe, as the apples are about mature; and hence the only means of checking them which suggests itself is by pasturing with sheep or pigs, which would eat up the infested fruit. When this larva is full grown it leaves the apple, hides just under the surface of the earth, transforming into a cocoon as shown in fig. 7.

The Apple Maggot is a native of America, and its natural food is the haws of our thorn trees and the crab-apples; and, just as the Potato Beetle left its natural food to prey upon a cultivated species of the same family, so this maggot seems of late

Fig. 7.

to be threatening a wholesale invasion of the apple orchards.

We have not so far met with this insect in Canada, but in Maine its ravages are somewhat alarming; it is also becoming a serious pest in Indiana, according to the Transactions of the Indiana State Horticultural Society for the year 1885, and is also reported from Massachusetts, Connecticut and New York.

FRUIT CULTURE IN BRITISH COLUMBIA.

A Letter from the President.

THIS Province is very far behind in fruit-growing. The markets are filled with California fruits which, in pears, are inferior quality to home-grown. They get apples from two adjoining States, which are down low in quality. Spies are quite ripe for the table, and won't keep long from present appearance. It is annoying to a fruit-grower to observe the apathy of the people to their own interests. Even where they plant orchards the trees are neglected so that their life is short and miserable, almost every tree being covered with moss and unhealthy in appearance. In trimming they evidently chop off branches without regard to symmetry or the future life of the tree. Indeed, it needs a practised eye and hand to do the work here in this respect, as, when trees bear, the load is so heavy that trees are twisted and bent in all shapes. My good friend Dempsey would thin out the fruit. An Association like ours would help to spur up the people, I should think. They

have fine valley stretches where fruits could be grown to perfection if properly attended to, and the soil is easily cultivated, and a climate most favorable. I have no opportunity to find anything on the subject of grape syrups here, as that fruit is not cultivated to any extent, many people thinking they cannot succeed, and besides they rest satisfied with those from California, which are certainly fine, though not high flavored. My time will be so occupied that I cannot go to California this trip, as desired. I leave here this week for Vancouver, and from thence eastward. All through, this "Canada of Ours" is a wonderful country both in extent as well as richness. For scenery I never even dreamed of anything like that passing through the mountains. There appears to be more desire among the people on the prairies for progress in forestry and fruit-growing than I find here, and certainly they are a much more energetic and "go-ahead" population, although struggling through hard winters and fighting with the many uncertainties of so large an extent of prairie. But I look for great results yet there, and I believe forest planting will play the most important part in bringing about such results. The men of the prairies are all heroes, possessing that determination of purpose and energy that is sure of reward, and we should give a helping hand.—Yours very truly, ALEX. McD. ALLAN.

SOME FOREIGN APPLES AND PEARS.

SEVERAL of my dwarf apples and pears have fruited this fall. I have sent by this mail three apples, the Queen, Lane's Prince Albert and Cornish Gilliflower (true); two pears, Fertility and Therese. You will find the names in P. & E. Transon Bros.' Orleans, France, catalogue. I have about 40 imported varieties of apples, and 15 to 20 of pears; some are equal to our best, if not superior. One fine pear that grew on a tree 18 inches high, the flavor of a rich musk melon, ripened with the Bartlett—by name, Beurre de Mortillet.—JNO. D. ROBERTS, Cobourg, 16th Oct., 1888.

MR. ROBERTS certainly deserves credit for his enterprise in testing and introducing to the notice of our Association so many varieties of foreign fruits. Last fall he sent us quite a large collection of samples of English apples, which he had grown from imported stock; see Report 1887, p. 172. Of these, the Cellini was a most attractive and showy variety; an English cooking apple of very good quality, and which has been found to succeed in Prince Edward County by Mr. P. C. Dempsey. Of these now before us, the most showy, by all odds, is the Queen. It is enormous in size, measuring 13 inches in circumference; oblate in form, with stem deep set in a deep, funnel-shaped green russeted basin. In color it somewhat resembles a King, but the red is more in stripes and blotches. Quality very good, especially for cooking. Such a showy apple as this, if it proves a good bearer, would be most profitable, and we shall be pleased to hear from Mr. Roberts upon this point. *The Garden* (Eng.) speaks of it as a fine cropper in England, and ripening in October. We have prepared an engraving of the Queen apple from the sample sent us by Mr. Roberts, which wil

give our readers a very correct idea of its size and form.

None of the other varieties seem to commend themselves to our notice as superior to those we have already in cultivation, either of those received now or last fall. Lane's Prince Albert is large, green, with deep red spread over the calyx end, firm, of good quality for cooking. The pears both impress us favorably, so far as one may judge from single specimens; and, by the way, this remark must qualify all that has been said above. The Fertility resembles in size and shape the Louise, but in color and markings is more like the Duchess, which it also

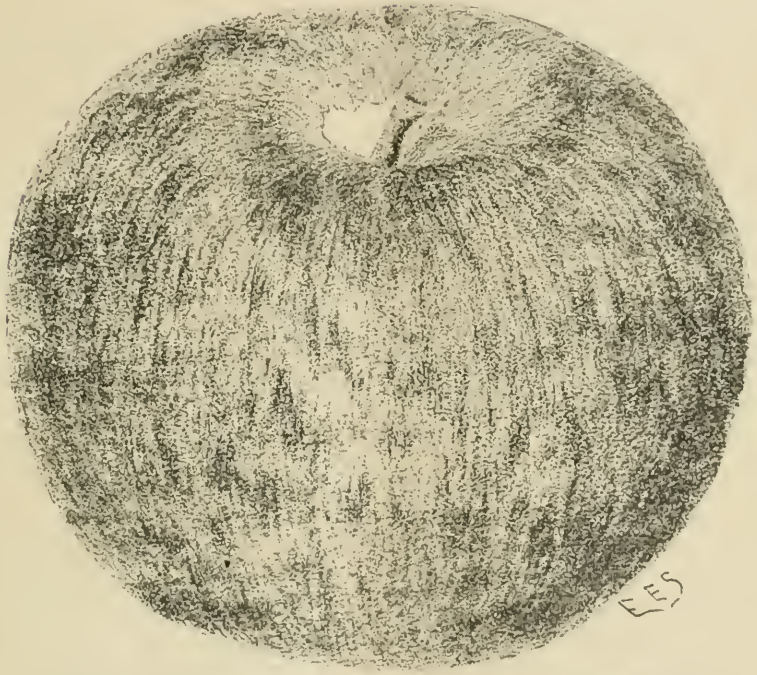

Fig. 8.—The Queen. Drawn and Engraved for the "Canadian Horticulturist

sprinkled with numerous green dots, but of very ordinary quality. The Cornish Gilliflower is of good quality, medium size, ovate, suitable for desert purposes were it more attractive in appearance, but its red is too much obscured by ugly green and russet patches. King of the Pippins is medium, roundish, ovate, yellow, tinged and splashed with red, flesh resembles in flavor. The Therese is a russet pear, somewhat resembling in form a small-sized Sheldon; the flesh is fine grained, melting, buttery, juicy, and of a very rich and excellent flavor. We should be inclined to call it very good. Commendable for dessert purposes. Both the above are ripe at this date, viz., Oct. 18.

A COTTAGE HOME.

By Rev. Geo. Bell, LL.D., of Queen's College, Kingston.

THE desire for the acquisition of property, money, or that which money will procure, seems to be universal in human nature. Add to this man's social and domestic instincts, and the result will be an intense longing for a *home*, a place which he and his family may call their own. With the possession of even the most rudimentary elements of æsthetic taste, the wish will arise to have a cosy cottage home, with some surroundings of trees, shrubs and flowers. Oh, how the toilers in cities dream of some such paradise in the country, and long for the hope of attaining it! If a man has inherited capital, or has early in life gained it, the question of obtaining a home, whether a cottage or a mansion, is easily solved. But the great majority are not in this case. In a new country like this the lot of most is to toil for daily bread, by work of hand or of brain, with no immediate expectation of accumulated means to invest in real estate. With the majority the only hope of a home of one's own is in a future, many years hence. When the amount which can be saved from income is very small, the prospect is discouraging, and many give up trying to save what seems an insignificant trifle. And so many men pass their lives in wretched houses, hardly fit to be called *homes*, paying to landlords what should in a few years have procured a comfortable home of their own. The inspiring hope of a home some day in the future is crushed out; the man becomes discouraged, and perhaps falls into dissipation, and his noble wife sinks under her toils and dies of a broken heart. Surely any efficient means of saving leakages from income, and accumulating them in view of a future home, should be encouraged. Building societies do not seem to have got down to the stage of meeting the requirements of the case; and I would ask business men who have the capacity for dealing with such a problem, if it is not possible to do more than has yet been done to aid the industrious and economical in this line.

I would also earnestly urge on all whose income is small to consider the importance of saving trifling sums, which are often needlessly spent, because being so small they are regarded as of no importance. One very wide-spread practice may be noted, respecting which a dialogue once took place, somewhat as follows:—

A.—"Mr. Blank has had a homestead burned up, worth $2,000."

B.—"How unfortunate! How did the fire occur?"

A.—"He lighted it himself."

B.—"Could he not put it out?"

A.—"He liked so much to see the smoke curling up before him, that he did not wish to have it put out."

B.—"Very strange; where was the fire kindled?"

A.—"At the end of a cigar, the other end being in his mouth; and at the end of twenty years the cost of the supply of fuel amounted to $2,000."

"Nonsense!" some reader will exclaim, "a man never could use $2,000 worth of cigars in twenty years."

Well, let us see. Many men of small incomes spend five, ten or twenty cents a day in tobacco or cigars. Some far more. Five cents a day saved, and at the end of each year put to interest at five per cent., would at the end of ten years amount to $202.50, twenty years $560, twenty-five years, $815. Ten cents a day so treated would in the same periods respectively amount to $405, $1,120, and $1,630. Twenty cents a day would amount to $910, $2,240, and $3,260. Now I do not wish to raise the question whether the use of tobacco is good or bad—what moral or immoral qualities may attach to the practice of filling the mouth with smoke for the purpose of blowing it out again; but suppose all said in its favor to be true (which may be questioned), is it worth as much as the home which the sums named might procure, or is its value a sufficient reason why a man should deprive himself and his family of a home of their own for all the succeeding years of their life? The possession of a cottage home with pleasant surroundings in the suburbs of a city or in a village, would confer on a family many benefits besides the mere value of it, on which I need not dwell.

TWO NEW SEEDLING APPLES.

To the Secretary of the F.G.A. of Ontario:

Sir,—I send you herewith descriptions of two seedling apples which have been grown in a district far north in Ontario, at Minden, a locality where it is commonly supposed that apples cannot be successfully grown. These have been sent me through the kindness of Mr. J. A. Barron, M.P., who has taken much interest in fruit culture in his constituency. As I think it is most important that the good seedling apples we have in Canada, especially those hardy enough to grow in the colder sections of our country, should be better known, and the production of the new seedlings be encouraged, I beg that you will give space in the columns of The Horticulturist for the descriptions sent. Should any of your readers have promising seedling fruits, especially late keeping apples, which they would like to have examined and reported on, I shall be glad to receive specimens from them. It is my desire that we should have at the experimental farms all the promising seedling fruits which are to be had, so that they may be tested side by side and their relative merits ascertained.

Seedling Apple,

Grown by Mr. T. C. Robson, Minden, Ontario.

Size above medium; form, oblate; color, greenish yellow, streaked and splashed with red; stem, slight and short, with a deep smooth cavity; calyx, open; basin, rather deep and slightly ribbed; flesh, yellowish white, fine-grained and moderately juicy, with a faint aroma and a mild pleasant flavor; core, rather large. A fair dessert apple and a good cooker. Its size and appearance would make it a desirable apple for the north. From its form, color and flavor, it is probably a seedling of Duchess of Oldenburg. Season, October and November.

Seedling Apple,

Grown by Mr. J. M. Robertson, Minden, Ont.

Medium size, 2⅞ in. by 2¼ in.; form, oblate conic; colour, greenish yellow,

more or less splashed and dotted with dull red; stalk, short and slight; cavity, rather shallow; calyx, small, closed and shallow, with the basin strongly ribbed; flesh, nearly white, firm, grained, juicy and crisp; sub-acid, not high-flavored, but a pleasant eating apple and a good cooker; core, medium size. Is the type of Duchess of Oldenburg, but smaller in size and later in season. Ripe in November.—Yours truly, WM. SAUNDERS, *Director Experimental Farm, Ottawa.*

STRAWBERRY GROWING THAT PAYS.

BY JOHN LITTLE, GRANTON, ONT.

VERY few people grow strawberries for pleasure, for no fruit that grows requires such diligent attention as the strawberry, and if this care is not given, vexation will take the place of pleasure every time. There are few, however, who cannot take pleasure in helping themselves to the fruit when once brought to perfection. It is this difficulty in cultivating the strawberry that deters so many of the energetic and enterprising farmers of this country from supplying their families with an abundance of this health-imparting and most wholesome fruit. But "where there is a will there is a way," and most farmers would find it to be a benefit to the family if they would in the coming spring plant a bed. They would the following season have fruit, if the plants were cared for, that would be to them a pleasure they little thought of. I will name a few that none need be disappointed in. The Crescent is a very popular berry because it is a great bearer, but there are other three new varieties which are said to excel the Crescent every time, that is, Burt, Warfield and Claude. The claims of BURT are—it has the brightest foliage of any yet sent out, is a vigorous grower, and has a perfect blossom. Its season is late; it is very profitable, of large size and the best shipper ever grown. Many growers prefer it to either the Crescent or Wilson. The WARFIELD'S claims are that it is more productive than the Crescent; of a larger size, finer-looking and better quality, and the most valuable variety yet introduced. The CLAUDE is earlier than the Crystal City, more productive and larger than the Crescent. If spared, I will tell the readers of THE HORTICULTURIST the value of these and other varieties after fruiting, in July, 1889.

HORTICULTURAL.

The Shaffer's Strawberry.

THE Editor of the *Country Gentleman* says:—This large, very productive and valuable raspberry, introduced by Charles A. Green, of Rochester, without puffing or parade, has exceeded any other of the new varieties for the short period it has required for a general approval, east and west throughout the country. It exceeds any other variety we have tested in its invariably heavy crops. The berries are large, and uniformly free from distortion or any defect in form. It ripens after most of the great throng of varieties have passed away. Although the tips of its canes are often nipped by the cold of winter, it has the reputation of being fairly hardy. Cultivators find that the

most valuable fruits are not always those which are most highly landed when introduced. This was strikingly the case with the Wilson strawberry, which its originator offered for sale when first introduced at one dollar a hundred plants, nearly at the same time that other strawberries were advertised at five dollars a dozen, and which were forgotten long before the Wilson was the most popular berry in nearly every State in the Union. On the whole, it is better for planters to make their selections according to proved merit, rather than from high advertising praise.

Two Excellent Pears.

THERE are two late pears, both remarkable for their excellence, which we place as high on the list as any, that are quite unlike in appearance and character. They are the Sheldon and Anjou; the first a native, the other a foreigner. The Sheldon originated in Wayne County, N.Y.; the Anjou is of French origin. Well grown specimens of the Sheldon, when exactly at the right degree of ripening, we have been inclined to place above all others for delicious quality. It is strictly a melting pear, very little pulp remaining after it once passes the lips, and the flavor is exquisite. The Anjou, on the other hand, is both buttery and melting. While the Sheldon is sweet, the Anjou has a slight and agreeable acidity. The Sheldon must be taken just at the right time to be at its best, or as an amateur remarked, "it must be eaten by the chronometer." It is variable in quality and sometimes poor. The Anjou has the remarkable quality of keeping for some time after it has become mellow and fit for eating, which gives it a great advantage. It has long been a famous market variety and twenty years ago sold in some eastern markets for twenty dollars a barrel; now it brings about one quarter that sum. The Sheldon, less attractive in appearance to most observers, and not as reliable a bearer, has had but little place in markets until within a few years, and even now it is not widely known. President Wilder said that if he could have but one pear it would be the Anjou, and he had the satisfaction of knowing that he first introduced it in this country.—*The Country Gentleman.*

Excluding Rabbits from Trees.

A NEWLY proposed remedy for the exclusion of rabbits from fruit trees in winter, is to mix tincture of assafœtida with liquid mud and apply it thinly with a brush to the stems of the trees, or to every portion which the rabbits are in the way of attacking. A spoonful of the assafœtida to a couple of gallons of the mud is sufficient, but it may be well to vary the quantity and observe the effect. There must be enough to convince these animals that to get at the bark they must take in so disagreeable a dose of the medicine as to prefer leaving it untouched. It may be necessary to repeat the application as may be required.—*Ev.*

FLOWERS

THE ROSES OFFERED TO MEMBERS FOR 1889.

By F. Mitchell, Innerkip, Ont.

A FEW notes on the roses offered in the plant distribution list for the coming year would perhaps be of interest to some of the readers of The Horticulturist. It will be noticed that three varieties are offered from which a selection can be made.

Paul Neyron is now perhaps as well known as any hybrid perpetual, but it is in so many particulars such a thoroughly good rose that the knowledge of it should be disseminated still farther. The only weak points this rose has is that it is slightly coarse in its coloring and form, and the wood if exposed is liable to winter kill. But to offset this, there is, in the first place, its enormous size—and despite all the lauding which newer varieties are receiving, and though many votaries have turned from it to newer idols, which they seem to see through magnifying eyes, it really holds its place to-day as the largest rose ever produced. In addition to this it is moderately fragrant, a rank grower, an autumnal bloomer, and in addition to its being a good all-round rose for the open ground, it is a first-class rose as a pot plant in the conservatory. The color is deep rose.

Baron de Bonstetten is a magnificent rose. The color is maroon, blazed with crimson. It is of good size, fragrant, and of fine form. It is the hardiest and is the most easily managed of all of the very dark roses. It is not a good autumnal bloomer, but at its best, in June, it is often the grandest sight in the whole rose garden.

Gabriel Tournier, the other variety offered, is a rather later arrival than either of the others. It is not so conspicuous or noticeable an object in a garden of roses as either of the other varieties, not being of unusal size or extreme in color, but at the same time it has so many good points that it is valued very highly by experienced rose growers. The color is deep rose (not red, as some catalogues have it); it is very fragrant, of fine form, a very prolific bloomer in the early summer, and also blooms freely in the autumn. Its only weak point (and what rose, or human being either, has not one at least) is, that in rare, particular states of the atmosphere, the buds will not open fully. The plant is of a strong, long and willowy growth.

All the three varieties which have been placed upon the distribution list are good free growers, and require less coaxing and petting than many other varieties demand, and yet rank quite as high in the scale of general merit and value as these more capricious and exacting sisters.

A WHITE GLOXINIA.

Out of a batch of seedling Gloxinias this past summer, I had one which bore blooms of the finest white. Although I had never before seen a white Gloxinia, I did not know the rarity of such a flower until I happened to read an article in the *American Florist* by an experienced grower (William Falconer), in which the writer says he never saw a white Gloxinia, though at the same time he says that an English firm claim to have produced such a flower. Mine is of the finest, most snowy white. It is of the erect form, and bears the blooms well above the foliage on long and strong stems.

SOME HINTS IN REFERENCE TO THE BULB DISTRIBUTION FOR SPRING OF 1889

By Hermann Simmers, Toronto.

HAVING been requested to give a few points in reference to the above subject, in order to facilitate the cultivation of the bulbs, I will endeavor as explicitly as possible to give a few practical hints, so that it may be easier for the cultivator to care for the bulbs.

Not much reference need be made to the Gladiolus, except the variety Hortense, which is a beautiful rose, on white ground, flamed carmine. A description of the cultivation has already been given in one of the previous numbers of The Horticulturist. It is an exceedingly pretty flower, and one that will be much admired.

Tigridia Conchiflora, sometimes called Tiger Flower, color fine yellow spotted crimson, is a genus of Mexican bulbs growing about one and a half feet high, and producing flowers of exquisite beauty. The flowers are large, about four inches across, of singular curious shape, and the color gorgeous and purely contrasted. It blooms from July first until October; the bulbs may be planted in May about two inches deep in any garden soil, and require no particular care. It is sometimes called the "Day Lily," as the flowers open in the morning and have closed and entirely finished their bloom the same day; other buds make their appearance every few days and flower in a similar manner. In autumn after the tops are killed by the frost, the bulbs may be taken up and kept in a dry place away from the frost until the time of planting in the spring. They are one of the easiest bulbs to cultivate, and will flower abundantly in any situation.

Fig. 9.—Tiger Flower.

Apios Tuberosa, sometimes called tuberous-rooted Wisteria, closely resembles the common Wisteria in vine and foliage, and has clusters of rich, deep purple flowers, which have a strong violet fragrance. This plant, which is a native of Virginia, has for a century been cultivated in botanic gardens in Europe, and has only lately been brought to prominence, through a French traveller during his travels in North America, who believed that the tubers could be made of value as an article of food, for which they are used to some extent. Various attempts have been made to cultivate them like the potato, but this is found difficult, on account of the length and weakness of the turning shoots and the length of the roots. The tubers cooked in steam are free from all acidity and bitterness, and very much resemble potatoes. Dressed in the same way, they contain more nitrogen, also more starchy farina than potatoes.

Their care and cultivation is very simple; plant the tubers near a trellis, about three inches deep, in well prepared ground. They are perfectly hardy, and do not require to be taken up in winter, which is a great advantage.

The bulbs have a hard, woody covering, and should not be kept out of the ground for any length of time. Sometimes after transplanting in the spring they might not make their appearance until midsummer, or perhaps not at all, but the bulbs being hardy will not hurt by remaining in the ground, and will, most likely, make their appearance the following spring. This may seem a rather long time to wait, but I do not say this will occur every year. It is only on rare occasions this happens; but for an exceedingly pretty and rapid climber this should take a prominent place in the future.

I trust any person trying the foregoing bulbs may have the success I anticipate, as they frequently find an obscure place, on account of not having been valued sufficiently. Every one should succeed even with ordinary care, so if extra care is bestowed there should be no complaints heard of.

FORESTRY

TO-DAY FOR FORESTRY.

By Forester.

THERE is no time more suitable for the tree-planter than the present in Ontario.

Prof. Fernow, Director of the American Department, says in a late paper the man who plants to-day will have timber just when it is valuable, and in this Province when the natural supply is not yet exhausted; but so many countries which once supplied themselves both with fuel and manufactured wood are now seeking it a little further from home, it may well be that we can anticipate the profit of our plantation, if available when the forests of this wooded country are at last extinct.

I never heard of logs brought to a sawmill by railway until last year, and now a factory near by using a lot of hardwood finds it cheaper to import the logs than to search for the few scattering trees in this country still depending on the native forest.

If we can even to-day induce owners to care for and preserve the wood lots and encourage the product, it is not too late for scientific forestry to be a useful as well as interesting study for both the land owner and the manufacturer, and if we can lay out plantations on a scale and of a kind to continue the supply to which we are accustomed, our study will be practical as well.

The economic value of forest products is really under-valued too often. I hear men say that plantations are only for futurity. It is true that the climatic and protective influences of a plantation increase for a long period, and that large trees are of more value in the arts than small ones; but it is not necessary for a plantation to grow into a forest before it is profitable.

A factory near me offers to buy more trees than our plantation will ever raise, and take them all as soon as they are six inches in diameter—ash, locust, hickory, oak, elm.

Of course we have no data in this country to show what the real growth of a plantation would be, but if there is any truth in the reports of our American neighbors, the ash, locust and elm ought to average six inches at less than ten years of age from seed, much less if from nursery seedlings.

If any manufacturing neighbor knows now the difficulty of getting his supply, is

it not more than likely that in ten or twenty years he will be able to pay a handsome price for just such trees as a planter would like to raise ?

It is not necessary to my argument to go over all the intermediate profits of a plantation of ash or other trees, but all the authorities who speak from actual growth say that the thinnings of a lot will pay all expenses—extra trees for transplanting, small trees for hoops and turnings, and many items of profit to the owner. I assume this is agreed to and that the encouragement of scientific forestry is desired by all, and that we are all waiting for some one to begin.

The decline and gradual removal northward of the manufacture of lumber for export are well known. The introduction of coal for fuel in many townships is often referred to, and calculations of the loss to the importers have been attempted.

The preservation of the lumber producing forests is rather more of a problem than Canadian forestry students are prepared to attempt.

The question of how much thinning either general or in blocks, will keep the forest still growing and still producing, is one that I do not hear debated in Canada. A lumber man tells me that a grove of pine trees will grow and do well for sixty years longer inclosed in a forest than if left in an isolated block ; that the pine trees on the margin of the forest left in the burnt districts on Lake Huron are gradually giving way, first near the burnt strips and then further in up to half a mile or more of what looks like a perfectly vigorous forest, the drying out, or the wind, or some other effect of the open space working an injury we cannot see.

Many of the remaining wood lots of Ontario are now being searched for a few saleable trees, and a few groves of valuable trees are still held by the owners. It is not necessary to introduce the study of forestry while these can still be found. The very scientific American writer above referred to gives a system of forestry some thing like this :

A. Scientific.

I. Forest Biology.
Consideration of growing crop.

II. Timber Physics.
Consideration of the grown crop.

III. Social Physics and Chemistry.
Conditions for growing.

B. Economic :

I. Statistics. Areas and products.

II. Technology. Lumbering.

III. Forest Policy.

C. Practical :

I. Origination. Artificial plantations.

II. Management of Crop.

III. Harvest.

Are not the interests of this country directly involved to-day in every item of this scheme?

The Woods in Winter.

There are many who never take a ramble in the woods in the winter season. They appear to think that because the trees, save the pines, hemlocks, etc., are bare, and because the birds have left for a warmer climate, there is nothing to be seen in the woods in winter. Those who have learned properly to use their eyes, will find that the woods possess enough of interest at all seasons to make a visit to them profitable at any season. Lumbermen, who work at felling trees, do so in the winter only, and can distinguish trees with great accuracy, and tell one kind of tree from another as far off as they can see them. They do this from the peculiar way in which the tree branches, and the color and markings of the bark. We have found that these same lumbermen, if shown the leaves and flowers of the trees with which they are so familiar in winter, fail to recognize them ; indeed many are surprised to learn that forest trees have flowers. To be able to recognize trees at all seasons, and to name them accurately, whether they have leaves or not, is a very useful sort of knowledge, which every farmer should acquire. The carpenter, the cabinet-maker, and all other workers in wood, while they may not be able to recognize

the trees, can tell at once, from a mere chip, the kind of wood they are handling.—*American Agriculturist* for December.

"It is strange," remarked a Boston belle, as she observed the shimmering silver birches, "that people will go and whitewash trees that are almost in the woods."—*Puck*.

Forestry Notes.

BY FORESTER.

Centennial of the Ohio Valley.—An interesting feature of this exhibition at Cincinnati was the Forestry Exhibit of Prof. Adolfs Leue, including Forest Zoology, Entomology, Forest Technology. The professor's collection of tree seeds and 200 varieties of woods are among the best in the Union. He also issues yearly a very valuable forestry report for the Ohio State Forestry Bureau.

On a farm in the county of Norfolk the boys went out with a wagon in the noon hour lately and got in the box full (about thirty bushels) of walnuts. They are fairly fit to eat if kept over winter, though of a strong, oily taste. In the fall grocers in the vicinity buy them at fifty cents a bushel for this purpose. On this farm they always pick up enough chestnuts to pay the taxes, and some years they get $150 worth.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

The New Year.

We wish a "Happy and Prosperous New Year" to the many readers of The Canadian Horticulturist, hoping that in its new dress and other improvements it will prove to be a still more welcome visitor than the complimentary remarks of its readers lead us to believe it has been in the past.

The increased demand upon its pages, and the growing membership of our Association, led the Directors, at the last meeting, to place the enlargement of our journal from twenty-four to thirty-two pages, at the discretion of the Executive Committee. At the present writing the prospects of support are sufficiently encouraging to warrant our printing an enlarged edition of the January number, the continuance of which is dependant upon the proportionate increase of membership. Our friends will therefore prove their appreciation of our exertions by showing the January number to their acquaintances, and seeking to send in long lists of new subscribers.

The Fruit Growers' Association of Ontario.

Will hold a combined annual and winter meeting at the Court-House, in the City of Hamilton, beginning on Tuesday evening, the 19th, and continuing during the 20th and 21st of February, 1889.

A show of choice samples of fruits from each agricultural division is desirable for comparison. New fruits, improved horticultural implements or machinery, plants, flowers, etc., on exhibition, will receive due notice in the report of the Fruit Committee. If sent by express they may be addressed to the care of the Secretary, at Hamilton.

Certificates for reduced railway fares will be mailed to anyone applying for them to the Secretary, at Grimsby.

Questions intended for the *Question Drawer* may be sent in advance to the Secretary, at Grimsby, or handed in at the meeting.

The following is an outline of the programme, with some questions for discussion added to each subject, from which however, it may be necessary to deviate in some details:—

Programme.

Tuesday, 8 p.m., Welcome address by the Mayor—reply by President; the President's annual address; reports; election of officers.

Wednesday, 10 a.m., Apples at the Cold North: *Thomas Beall, Lindsay.* What varieties of apple trees are most

subject to black heart? How can it be prevented?

Horticultural Specialties for Farmers: the *Secretary*. Is apple growing profitable? Does it pay to export our apples? What are the drawbacks of exportation? Transportation of fruits to home and foreign markets: What complaints have we to make against the railway, express and steamboat companies?

Paper by *A. M. Smith, St. Catharines.*

2.30 p.m., Question Drawer.

Paper by *S. P. Morse, Milton.*

Plums; Varieties for Home Use and Market; Influence of the Scion on the Growth and Longevity of the Tree, etc., etc.: *Geo. Cline, Winona.* Spraying for Curculio. Prunus Simoni.

How best to Secure Uniformity and Fairness in the Awards of Prizes to Fruits at Fairs: *Thomas Beall, Lindsay.* Discussion of subject. Is it best to advocate the one judge system in the horticultural department at our Fairs? Should a scale of points be given by the judge in fruits, as is done in the poultry department? What is the best manner of labeling varieties of fruits for benefit of the public?

Forestry. Address by *R. W. Phipps*, Commissioner of Forestry, Toronto. What distance apart should walnuts be planted? How many per acre? What is the present value of walnut lumber?

8 p.m. Paper by *D. W. Beadle, St. Catharines, Ont.*

Chrysanthemum Growing: *Messrs. Webster Brothers, Hamilton.* Discussion of subject. In growing such plants as Geraniums, Fuchsias, Cinerarias, Primulas, Begonias, Callas, Oxalis, Tulips, Hyacinths, Heliotropes, Coleuses, etc., in house, or in small greenhouse attached to dwellings, what temperature is required, and how much water? Should plants exhibited at fairs be given prizes when shown without labels of variety, both common and technical?

What can be done with a city garden of, say, 20 feet square in producing supplies for a family: *Dr. W. C. Adams, Toronto.* What is the best way to destroy the cabbage worm (*Pieris rapæ*)? What varieties of tomatoes are least subject to rot?

Addresses by by the *Hon. C. Drury, Minister of Agriculture, Rev. R. Burnet, of Milton*, and *Mr. A. Alexander, F.S.Sc. Hamilton.*

Thursday, 10 a.m. Paper by *A. M. Smith, St. Catharines.* Discussion.

My Experience in a Fruit Garden for Home Use: *T. H. Race*, editor *Mitchell Recorder.* Discussion of subject. What varieties of strawberries, currants, raspberries, blackberries, should be planted for home use?

Fertilization of Plants: *Prof. Panton.* Discussion.

Birds Useful and Injurious in Horticulture: *T. McIlwraith.* Should a law be enacted favoring the extermination of the house sparrow.

Thursday, 2.30 p.m. Grapes: Varieties to Grow, Shipping, Distributing, Marketing, etc., by *E. D. Smith, Winona.* Discussion of subject. What s the best method of preserving grapes or winter use? What varieties are best or keeping? Should grapes that are grown to an abnormal size by ringing compete at our fairs with those grown in the ordinary way? In judging fruits at our fairs, should size or quality have the highest value? Should the Fruit Growers' Association be represented at Farmers' Institutes?

Is it not time for the F. G. A. of Ontario, to take up the question of marketing our fruits? Would it be wise to have a fruit inspector appointed; or what means could be adopted to induce growers to put up good, straight, honest packages of fruit? Could not this Association act unitedly in marketing fruit through its own agents, instead of dealing with commission men, who often make more than the growers? Is it true that forests influence rainfall? Is the Ontario Government likely to take any step to preserve our forests in the districts at the head waters of the Muskoka and Ottawa rivers? What kinds of forest trees are most pro-

fitable to grow on waste places? Should any steps be taken to discourage the slaughter of birds for ornament?

British Columbia as a Fruit Country.

We notice some lengthy and interesting articles on the above subject in the *Weekly News Advertiser*, of Vancouver, B.C. It seems that a representative of this prominent paper met with our President, Mr. A. McD. Allan, and gives a very extended report of his interview.

He compliments the Province upon its adaptability to fruit culture, and encourages the people to engage in fruit culture, giving them many details of planting, management of an orchard, and winds up with a description of the Fruit Growers' Association of Ontario as an example of the kind of organization which should be had in British Columbia.

Delaware Red Winter.

At the Horticultural Exhibition held in Wilmington, Delaware, last fall, exhibits were made from unquestionable sources of the above apple, and of an older variety, the Lawyer. It was unanimously agreed by the committee that these were but two names for one apple, for no distinction could be observed either in tree or fruit.

Using the Bordeaux Mixture.

According to a writer in the *Philadelphia Weekly Press*, the cost of treating an acre of grape vines to this copper sulphate solution, both for material and labor, need not exceed $10. This mixture has been described in these columns, and since it is so economical, as well as effective in the destruction of black knot and mildew, its use should become general, whenever these fungi are troublesome.

The Eureka Strawberry.

Mr. John Little, of Granton, Ont., speaks very highly of the Eureka strawberry, a variety originated by Mr. Geo. Townsend, of Darke, Ohio. He says it is very prolific, that the berries are large and of good quality, firm, and of good shape, medium to late in ripening, pistillate. He encloses a testimonial from Pres. Lyon, of Michigan, who says he has nothing, among perhaps one hundred varieties, which excels it in the qualities which go to make up a good market berry, unless it be Bubach, which approaches it very nearly.

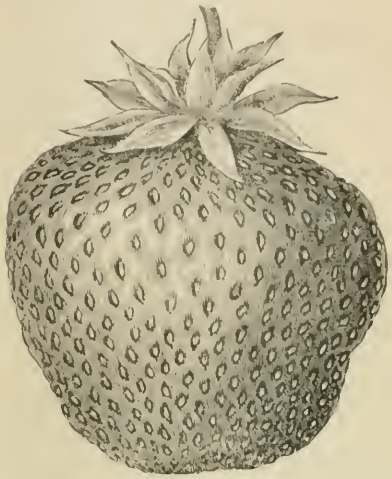

Fig. 10.—The Eureka.

The Farmers' Institutes.

A plan is being considered for the co-operation of our Association in the work of Farmers' Institutes. One of the objects we have in view is the general diffusion of knowledge among the farmers concerning the best methods of fruit culture, and the best varieties to cultivate. We also seek to encourage the planting of forest trees, the preservation of our native woods, and the adornment of our rural homes with the most suitable varieties of trees and shrubs. The meetings of Farmers' Institutes throughout our country in January next gives us an opening for usefulness in this direction, and the most of our Directors, some of whom are specialists in one line or another, have agreed to attend two or three meetings of the Farmers' Institutes in

January next, in their respective agricultural divisions, to assist the professors of the Agricultural College in their arduous duties. This will add increased importance to the office of Director, and it remains with our Association at the annual meeting to see to it that the best men hold the positions.

QUESTION DRAWER

Hardy Crabs.

1. A LIST of best Hardy Crabs of good size, would much oblige, DANIEL DUNN, Jocelyn, St. Joseph's Island.

Try Van Wyck Sweet, Bailey's Crimson, Lady Elgin, Gibb, and Gideon's Martha, and report.

The Oyster-shell Bark Louse.

2. LOOKING over my fruit trees now that the leaves have fallen, I made the unpleasant discovery that a fine healthy five-year-old pear tree (Flemish Beauty) was thickly infested with the Coccus or scale insect. The stem, which is 3½ to 4 in. in diameter, and the larger branches, were covered by myriads of these noxious insects. Of course I did not leave the spot until I had scraped off every one I could see, and I hope I have rid this tree of this pest.

My object in writing you is to ask if it is at all a common experience for pears to be thus infested. I have not had much to do with pears, but was under the impression that whatever insect pest they were liable to the Coccus was not one of them.

The apple, I know, is very subject to the Coccus—mine were the past year—but, following your advice, I am glad to be able to say they are now almost free from them, and I trust another year's treatment will exterminate them.

Another question I would like to have answered is this—Has the Coccus, which, on the tree, appears to be absolutely inert, any power of locomotion? For in destroying them I simply scraped them off the bark, scattering them on the ground. Is there, then, any possibility, or even likelihood, of their ascending the tree and resuming their destructive operations.

Our correspondent no doubt refers to that species of Coccidæ, commonly known as the Oyster-shell Bark Louse. We have frequently drawn the attention of the readers of this journal to the great mischief done to many of our finest apple orchards in Canada by this pernicious pest. Many trees are stunted in growth, and in a dying condition through it, and yet the tiny insect escapes notice, though careful observation would reveal its presence in countless numbers.

In reply to the question we may remark that, although the pear tree is not nearly as subject to it as the apple tree, yet it is by no means free from danger, and they should be carefully inspected in those sections where the scale insect abounds.

Our correspondent's plan of scraping off the scales at this season is a proper one, and should be followed out by every orchardist who discovers that his trees are affected. To assist amateurs in recognizing this foe we give an engraving of a portion of an affected branch as it appears in the winter season. It should be understood that these are now simply shells, covering and protecting perhaps one hundred eggs each. They are the remains of the body of the mother insect, whose person is thus wholly devoted to her young. The eggs when scraped off upon the ground will no doubt lose their

FIG. 11.

vitality; but, lest any eggs should still remain, the tree should be thoroughly washed, about the first of June, with a strong solution of washing soda and soft soap. At this time the eggs hatch out, and the tiny insects, scarcely discernible without a magnifying glass, run about quite lively for a few days, until they fasten their beaks into some tender portion of

the bark, and there soon become fixed for the rest of their days.

The Hardiness of the Quince.

2. CAN the Quince be grown successfully in this latitude? And would it do well in an old pasture that has a deep rich soil, and was never ploughed? I propose planting an apple orchard, and I thought of setting a row of quince trees between the apple trees. W. C. CARVER, South Livermore, Maine.

We would be pleased to have reports from our members regarding the hardiness of the quince in our northern sections, but as we find that it occasionally suffers from the cold in the latitude of Hamilton, we judge it would not succeed well without protection in Maine.

We do not advise planting rows of quince trees in an apple orchard. The mode of treatment required is different, and besides the latter will require the whole ground before the quince trees are past serviceable age. It would be better to plant a quince orchard by itself; trees about twelve feet apart each way, so that cultivation may easily be given in two ways.

Seedling Apple from Hampton.

3. I ENCLOSE you by this day's mail two seedling apples. Will you please examine and try them, and let me know what you think about them? They are the medium size. Some on the tree would be much larger and some smaller. We find them to be excellent for cooking from the time they get large enough, and think good for eating. They have never been grafted yet. Do you think grafting would improve them? And, what kind would you advise to graft on? Shall be glad to hear from you.—H. ELLIOT, Hampton, Nov. 19th, 1888.

The apple is of fair quality and rather above average size; skin yellowish, with dots and splashes of red about the stem and is just now (Nov. 22) in prime condition for use. It has, however, no specific character which commends it in any way superior to varieties already introduced; indeed, when compared with such excellent varieties as the Fall Pippin, Gravenstein, Hubbardston, Ribston, etc., etc., it would not be considered worthy of a place. As horticulturists, we need to guard against the multiplication of varieties, and discourage the introduction to public notice of any variety, no matter how good it may be, if it is not superior to kinds already distributed.

Grafting would not be likely to improve it, as it is simply a means of increasing the number of trees bearing fruit of the same characteristic.

Hedge in Shaded Location.

THE following question and answer is from the *Garden and Forest*.—

4. SIR,—Can you kindly advise me what to plant to make a hedge against a fence about four and a half feet high, which is shaded, but not at all densely, by a few tall cherry and ailanthus trees, and which faces the north-east? Would Red Cedar do in such a situation? I should prefer an evergreen hedge, but do not like the Spruce for this purpose.—V., New Brunswick, N.J.

The Red Cedar, the Hemlock, the Abor-Vitæ and the White Pine can all be used to make a hedge in New Jersey. All these trees grow rapidly and bear cutting. Deciduous shrubs, however, as a rule, make better hedges in this country than Conifers, as they can better support the unnatural conditions to which hedge-plants must be subjected if they are to be kept to formal lines. The common Privet is one of the hardiest and most easily-raised plants which can be used for a hedge. The Barberry makes a beautiful hedge, and so do Lilacs, Syringas, Tartarian Honeysuckles and other hardy garden shrubs. A hedge is a formal thing, which is beautiful only when it is uniform and regular and perfect; a hedge in which there are gaps or in which some plants are feeble and sickly, is not an attractive object, and had better be cleared away and a new one planted, as it is almost impossible to repair an old hedge by inserting new plants. This is the reason why it is important to use only very hardy and carefully-selected plants in making a hedge. It would be impossible, probably, to make a really good hedge under the conditions given by our correspondent. The overhanging trees will inevit-

ably stunt the growth of the plants under them; and the hedge will present, therefore, a broken and unsatisfactory appearance, which cannot fail to be disappointing. An irregularly-planned border of hardy shrubs in front of a fence is always better than a stiff, clipped hedge; and when, as in this case, the fence is overshadowed by large trees, an informal plantation is the only one which can be safely used. The common Barberry and some of our native Viburnums and Dogwoods will be found excellent plants to use in this way. —Ed.

Apples for Alberta.

5. Please let me know through your valuable paper what varieties of apples and crab apples you think would be most suitable for this climate. Would you consider trees raised in a nursery in Minnesota, U.S., more suitable for this latitude than trees raised in Ontario? There are three apple trees, Russian varieties, growing in Edmonton; for three years they have made good growth, and have not been injured by frost at all, but I do not know what varieties they are. If you can kindly recommend a few varieties for trial in this country you will confer a favor on a subscriber.—I. H Long, Edmonton, Alberta.

We will gladly give you a list of varieties found comparatively hardy in Canada and Vermont; and shall be pleased to have you report their success in Alberta.

For summer—Yellow Transparent; autumn—Alexander, Oldenburg, Astrachan and Red Bütingheimer, Golden White; winter—Wealthy, Scott's Winter and Longfield.

Of crabs, Whitney's No. 20 is worthy of your trial; besides this, we would commend Hyslop, Transcendent and Van Wyck.

Not all trees sold for Minnesota grown, by agents, are really grown there; indeed, much of the stock so handled is grown at Rochester, N.Y. By all means buy your nursery stock from the nearest reliable nursery, but be careful to deal with some firm of good reputation. There would otherwise be little chance for hardiness between trees grown in Ontario and those in Minnesota.

OPEN LETTERS

Plants Tested at Toronto.

Sir,—In enclosing my subscription for 1889 I select the four strawberry plants, and if I have as good success with them as I have had with all the other plants I have received from the Association, I will be perfectly satisfied.

In 1885 I received Fay's Prolific Currant. This fruited in 1887 and 1888. I am now propagating from it, and will discard all my old stock as soon as I can.

In 1886 I received an Early Victor Grape. This fruited last summer, and bore eight branches of excellent fruit; compact clusters, rather small, very dark, and of pleasant flavor.

In 1887 I chose the Niagara Grape. The vine is now in the two-cane period, and is in a vigorous and healthy condition; it will, if all be well, fruit next year.

In 1888 I received two Golden Queen raspberry plants. These have grown to be good healthy plants, and if they stand the winter I shall expect a crop of yellow beauties from them next July. So, you see, I have reason to be satisfied.—J. L. Thompson, Toronto.

Fruit in Stormont Co.

Sir,—I had only 500 barrels of apples, and thought it a big thing for me. I consider I was fortunate in selling them all at home, even although it was at low prices, as with a double crop all round we could not expect it to be otherwise. My No. 1 Fameuse, Golden Russet, Seek-no-Further, and St. Lawrence netted me, excepting barrel and freight, $2 per barrel; barrel cost 35c. and freight about 27c.—62c.; leaving me clear $1.38 per barrel.

I sold a large lot of windfalls besides at 25c. per bushel. Many of my neighbors are holding on for prices I fear they never will realize, and whether they do or not they are running up expenses of storing and probably repacking, etc.

One thing sure, I have made more this year from my orchard than I have in at least the last ten years together, and I needed it

Oh, what rains we have had; it rains all day, all night and most of the rest of the time I have been proposing to some of my friends to buy in the "Great Eastern" (if she is not destroyed) as a place of refuge; if worse comes, I know you'll take some stock in the speculation. If she's not as fine in her lines as some of the ocean racers, I think she would compare well with Captain Noah's craft. I got my garden ploughed, grape vines pruned and covered, and am as much in readiness for winter as usual. We're never ready for its arrival any more than we are for its leaving us. Not that we're such shiftless beings, but we have to contend with short seasons, and much to do in them, so much so that much of our work is but half done.—JOHN CROIL, Aultsville, 12th Nov., 1888.

Fruit in Perth Co.

SIR,—I have been carefully watching your fruit crop reports from various sections of the Province, and from what I have gathered from THE HORTICULTURIST and other sources I am fully persuaded that in the one item of apples, this county has been more productive, and has sent more to foreign ports, than any other county in Ontario. The general complaint in the early fall was that the sample was unusually small on account of the drought, but after the rainy season set in the weather continued mild well on to the middle of November, and the result was a considerable growth in the size of all the later varieties. The sample, when gathered, was consequently a fair average, while the yield was abundant beyond that known for many years. Many car loads were shipped from this point, St. Mary's, Stratford and Shakspeare, to Manitoba, as well as several to the British markets, at an average price of $1.10 per barrel.

Plums were altogether a failure; cherries very small, and pears below the average in both size and yield. I have lost faith in the iron-filings theory in pear culture.

Strawberries were a very short crop. The largest yield and the finest berries that I had was from a matted patch of three years standing, on which I applied a heavy coat of ashes the fall before. There is, in my opinion, no fertilizer equal to ashes for old matted beds when properly applied.

Raspberries (red) were an abundant crop, but blacks were scarcer. My bushes—especially the Gregg—blighted badly and died away shortly after the blossoming season; and I have not yet learned the cause. Gooseberries were a partial failure, everybody complaining more or less of mildew. I picked from my garden about twelve pails full, comprising Downings, Smith's Improved, Industry and an excellent variety, and there was not a specimen affected with mildew in the whole lot. I attribute this to plenty of air and sunlight and a plentiful application of ashes.

Currants were an abundant crop, though few, as yet, have gone into growing them in this locality; and although I have done so purely for the love of the thing, my family disposed of about four hundred quarts at 10 cents per quart. Of the varieties I prize Fay's, when its growth is confined to one or two years' old wood. On older wood it is disappointing. Moore's Ruby has one special merit, and only one over other varieties. It is sweeter than any other variety, and more pleasant to eat off the bush or with cream and sugar.

The grape crop has been a fair average. With me the Brighton and Rodgers' 9 and 15 did well, but the Moore's Early will not grow enough wood, and is a poor bearer. I threw out the Prentis and the Pocklington as worthless after a four years' trial. The Empire State, Niagara, Amber Queen and Moore's Diamond have not fruited in this section yet.

I am looking forward with much pleasure to meeting with the fruit growers of Ontario at the City of Hamilton in February next.—T. H. RACE, Mitchell.

The Idaho Pear.

SIR,—We have a pear that we think is destined to succeed over a wide range of latitude. We are further north than your place, and yet the Idaho, so far as tested in the far south, gives great promise of success. Our correspondent in Texas writes that buds set last May made a growth of 7 feet, and that the growth seems perfectly healthy. We have the same report from New Orleans and Arkansas, while Prof. Budd writes very encouragingly from Iowa. Some parties to whom we have sent specimens of the Idaho, report it fully equal to the Bartlett or Seckel, which they regard as the best. Others do not give it quite so high a rank. Of course those receiving the sample specimens compare them with those grown in their immediate community, which is a pretty trying test to the Idaho, after having probably made a trip of 2,000 miles in a mail sack. It will probably fruit next season in Penn., N.Y. and N.J., when it will speak for itself, and we have no fear of the result.

With an apology for having intruded upon your time and attention at such length.—THE IDAHO PEAR CO., per J. H. EVANS, Lewiston, I.T., 11th Dec., 1888.

Longfield and Blushed Calville.

SIR,—You ask if I think it would be well to distribute Longfield and Blushed Calville to members of the Ontario Fruit Growers' Association.

Longfield is a young and abundant bearer, a good grower, but strangling and pendulous and bothersome if you feed sheep. Color,

bright red and yellowish white; flesh, tender and good quality, or perhaps fine quality. Size of Fameuse. Season, Oct. 1 to 15, and not much longer, and shows bruises, etc., a good deal, and in these ways not satisfactory.

I said season not much longer than Oct. 15, but pick carefully and put into cellar before too ripe, and it might keep a long time.

Blushed Calville has only borne with me two little specimens in nursery, and did not strike me.

Arabka (of Ellwanger & Barry) is young and abundant bearer, vigorous grower and rather upright, and fruit large—in fact very large, and deep purplish red with lovely bloom, and keeps longer than Longfield. My five trees were a perfect sight, but quality acid and thin.

Vargul fruited in nursery by my neighbor, John M. Fisk, is the Russian apple of finest quality we have grown here.

Furstlicher Tafelaffel (Royal Table) hails from Schroedu, of Moscow, and though marked tender by him, is quite hardy, so far with me. It is a young and abundant bearer, good size, good quality, good both in texture and flavor, and seems likely to keep some time. I have but two little trees of it, and it is very promising. It and Repka of Dep. of Agr., would seem to be my best keepers.

I cannot yet recommend. I have given you my facts so far.

I could send you some scions of some, but not in quantity.—C. Gibb, Abbotsford, P.Q., 9th Nov., 1888.

Our Fruit Markets.

The Apple Glut.

Never before in the history of the apple trade was such a glut of supplies flung upon the market on both sides of the Atlantic as at present, and it is thought that several weeks must elapse before a clearance can be effected. Cable advices from Liverpool on Wednesday reported sales of good Baldwins and Spies at 9s. to 11s., with the market sick and declining. One of our large shippers informed us that about 18,000 bbls. of frosted apples were on the way to Liverpool from Portland alone, and that a large quantity shipped from Boston was in the same condition. Shippers, therefore, dread the result of these damaged lots going on the English market, and more unfavorable returns are looked for. A London buyer advanced $1 per barrel on a large lot of apples booked on a through bill of lading from the west by the S.S. Pomeranian, but the apples could not be put on board, and were frozen as hard as cannon balls on the wharf. It is estimated that the stocks in store in this city are about 75,000 barrels, although some believe there are more. One of our oldest and richest apple dealers made the following remark a few days ago: —"This is a most extraordinary apple year, and we have all got bitten through paying too high prices."

Regarding the English market, a large Liverpool firm writes:—"The arrival of two large cargoes yesterday from Boston proved too much for our market, and prices had at length to give way. Boston Baldwins sold freely at 8s. 9d., 9s. 6d., 10s. and 10s. 6d. for really good fruit, and with the prospect of 60,000 to 70,000 due next week, we do not see much chance of any immediate recovery. New York fruit participated in the decline. Baldwins made 10s. 6d. to 11s. 6d. A great deal of poor and wasty stuff is also coming forward, and this does more damage to prices than anything else. Buyers are afraid to buy when they see such quantities of wasty apples, and will not bid for any but choice lots."—Trade Bulletin, Dec., 1888.

The Export Apple Trade.

Recent mail advices from Liverpool, dated December 8th, state that "the continued heavy arrivals have at length had such an effect upon our market, that buyers have positively to have the fruit thrust upon them, and that at their own prices. Good New England fruit continues to sell at 8s. 9d. up to 8s. 6d., while New Yorks are neglected at 9s. to 10s., a very few parcels of choice fruit making 11s. to 12s. Canadian arrivals are exceptionally heavy, the last three steamers from Montreal docking within a few hours of each other 36,000 barrels. Very many of these were small and of poor quality, and sold at 9s. to 10s 6d., while the rejections of 'slack packed' and wet have been exceptionally heavy, having evidently suffered from long passage in severe weather. In London, they have had two steamers direct with 35,000 barrels, the prices obtained meeting about the same as Liverpool, while a lot of Nova Scotians sold for 7s. 6d. to 13s. 6d. It will take until after Christmas to clear off the accumulated stocks, when we should see better prices."

Montreal.

Apples.—The market is as dull and unsatisfactory as it can be imagined, sales of frozen fruit having been made at 42c. up to $1 per barrel, which shows a big loss to

shippers. Good to choice sound fruit is quoted at $1.35 to $1 50, although some holders will not offer at these figures, preferring to hold for better rates later on. Jobbing lots of sound fruit are quoted at $1 50 to $2.

Evaporated Apples.—The market is quiet at 8c. to 8½c.

Dried Apples.—The supply is fair, and we quote 5c. to 5½c.

Grapes.—The market is steady, with sales at $4 to $5.50 per keg as to quality. Fancy large kegs bring higher figures.

Cranberries.—The market is quiet at $3 to $6 per barrel.

Pecans.—The market for pecan nuts in New York has advanced 3c. per lb., and fs quite excited.

Oranges.—The market is quiet, Jamaica being quoted at $4.50 to $5, and Florida at $3.50 in boxes.

Onions.—Red and yellow Canada onions are quoted at $1 35 to $2 per barrel Spanish onions are steady at 75c per crate

Potatoes.—Car lots, 55c per bag, and small jobbing lots at 65c to 75c Trade Bulletin, Dec., 1888.

New York vs. Montreal Shipping

Sir,—You will remember our mutual friend, Mr. A McD Allan, when in Montreal last summer stated that the American rail lines handled fruit better than the Canadian roads. I did not at the time dispute the statement; now I wish to do so most decidedly. My experience this fall has convinced me that we do those things better—very much—in Canada. I have not the time to go into the whys and hows just now, but when I next meet you I will be prepared to uphold Montreal against all-comers. —James Thom, New York, 4 Dec., 1888

OUR BOOK TABLE.

Report on the Forest Conditions of the Rocky Mountains, and other papers, with a map showing the location of forest areas on the Rocky Mountain range. With the compliments of Norman J. Coleman, Commissioner of Agriculture, Washington, U.S., 1888.

Black Rot, by F. L. Scribner, Chief of the Section of Vegetable Pathology; being Bulletin No. 7 of the Botanical Division of the Department of Agriculture, Washington, U.S.

Journal and Proceedings of the Hamilton Association, 1887 and 1888. Part 4. A. Alexander, Recording Secretary, Hamilton, Ont.

Price List of Trees, Vines and Plants, for sale in spring of 1889 at the Winona Nursery, by Messrs. Smith & Vanduser, Winona, Ont

Price List of Trees and Plants for sale at Niagara Falls Nurseries; E Morden, proprietor, Niagara Falls South, Ont.

The Farmer's Advocate and Home Magazine is published by Wm. Weld, London, Ontario. It is a monthly magazine of a large circulation among Canadian farmers, and contains articles by the leading Canadian farmers upon agricultural subjects It has just completed volume xxiii., and a glance at the index will satisfy any farmer of the valuable nature of its contents It is still published at $1.00 per annum.

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THE CANADIAN HORTICULTURIST

PROSPECTUS FOR 1889.

A journal for Fruit Growers, published monthly at Toronto and Grimsby by the Fruit Growers' Association of Ontario. Twenty-four pages choice reading on Fruits, Flowers and Forestry, well illustrated both with beautiful **Colored Plates** and other Engravings of Fruits, Flowers, Trees or Shrubs. It is proposed to still further **enlarge** and **improve** the Journal for the year 1889, and still to give it for the usual sum of $1 per annum.

This Journal is published wholly in the interests of **Fruit Growers and Farmers**, and contains the fullest information upon this subject, both for professionals and amateurs.

The annual report of the Fruit Growers' Association of Ontario also goes **Free to every Subscriber** and contains a careful verbatim report of the discussions on Fruit Culture which took place at the various meetings of the year, with all the papers read at such meetings.

PLANT DISTRIBUTION.

In addition to the above, every Subscriber may make one selection from the following list of Plants, etc. o be distributed in the spring of 1889:

1. **The Vergennes Grape.**
2. **Winter St. Lawrence Apple.**
3. **The Princess Louise.**
4. **A Hardy Rose Bush.**
   Either Gabriel Tournier, Baron Bon Stetten or Paul Neyron.
5. **A package of Summer Flowering Bulbs (viz.: Tiger Flower Tuberous-rooted Wisteria and Gladiolus).**
6. **Two Chinese Primroses.**
7. **Package containing Japanese Ivy and Geranium.**
8. **Four Strawberry Plants.**

WHAT OUR FRIENDS SAY OF US:

A knowledge of the habits, care etc., of the different fruit trees, plants, shrubs, flowers, etc., is not possessed by most of garden managers, and as a consequence great losses and failures in many different ways occur. Now to help this the "Canadian Horticulturist," a monthly magazine at $1 00 a year is considered invaluable. In it, just at the right time of the year, appear remedies for the many new garden pests, descriptions of choice and new fruits, with colored plates, and in fact we couldn't begin to enumerate ts varying and always interesting contents.—*Bradford Witness.*

The "Canadian Horticulturist" for January is just to hand, in a new and beautifully designed cover. It contains a colored plate of the lovely iris that is a treasure of art. It is now recognized as the leading Canadian journal of Horticulture.—*Canadian Agriculturist.*

No. 7 of Vol. 11 of the "Canadian Horticulturist" is before us, and a very nice number it is, on fine paper, fine print, and filled with interesting matter, with a fine tinted lithograph of the winter St. Lawrence apple for a frontis piece. It also has, among other cuts, one of a wheelbarrow ladder, which strikes us as a very good idea.—*Ex.*

We are in receipt of the "Canadian Horticulturist" for July, published by the Fruit Growers' Association of Ontario, Grimsby, and it is, as usual, brim full of matter on Horticulture. Its visits every month are looked forward to with pleasure. It is worth double the money that is paid for it, and is invaluable to those devoted to Fruits, Flowers and Forestry.—*The Advance*, Stouffville.

The "Canadian Horticulturist" for May is one of the best numbers of that really excellent journal yet published. The colored plate represents a life picture of the German Prune, a plum that has gained great favor with fruit growers, and was highly spoken of at the Association meeting at Collingwood last year. The "Horticulturist" is worth more than the subscription price to any person engaged in fruit culture or in gardening.—*Meaford Mirror.*

There is scarcely anything relative to the flower garden, the vegetable garden, the small fruit garden or the fruit orchard that the "Horticulturist" does not deal with, either by its competent editor, L. Woolverton, M.A., or by some of its staff of able contributors.—*Ex.*

The "Canadian Horticulturist" appears to improve with each number, and is winning for itself a place long filled by American publications, which it is superior to in every way for the Canadian fruit grower, as it deals largely with Canadian subjects, and the fruits most suitable to our climate.—*Flesherton Advance.*

SAMPLE COPIES, Envelopes, Blank Forms, etc., sent free to any one who will use them in the interests of the Association. Address

"THE CANADIAN HORTICULTURIST," Grimsby, Ont.

VERGENTIES.

THE

Canadian Horticulturist

VOL. XII. *FEBRUARY*, 1889. NO. 2.

THE VERGENNES GRAPE.

OUR various sorts of grapes might well be classified, as our apples and pears are, according to their keeping qualities. Some varieties, as, for instance, the Lady, are fall grapes, and need to be eaten soon after their time of ripening, or they will begin to decay; others, like the one under consideration, are winter grapes, and may, with a little care, be kept in good condition all winter. The Vergennes, although it ripens with the Concord, is not in prime eating condition until the month of December, by which time it has mellowed and improved in flavor; it reaches its best in February, and may be kept much longer with due precaution. This is an important point in its favor when we remember the acknowledged virtue of the grape as a medicinal agent; and in planting varieties for family use we need not only to consider variety of color, but also what selection will give us successive supplies for our table. For winter red grapes, then, we may plant the Vergennes and the Salem, the latter being Rogers' No. 22, and possessing keeping qualities nearly equal to those of the former.

The Vergennes is a choice seedling which sprung up in Mr. Wm. E. Green's garden, at Vergennes, Vt., after which place it is named. The first fruit was borne in the year 1874, and in the winter of 1880-1 it was exhibited at various horticultural meetings, receiving high commendations, especially for its keeping qualities.

The following is a description of the grape:—*Clusters* medium to large and somewhat loose; *berries* large, round, holding firmly to the stem; *flavor* rich; *skin* very thick, tough, red, covered with a beautiful bloom; *flesh* free from hard pulp, of pleasant but not rich flavor.

The vine is of the Labrusca family, and has the vigor and health so characteristic of it. That it is hardy enough for most parts of Ontario seems to be almost certain, for it has been successfully grown by W. Meade Pattison, at Clarenceville, Province of Quebec. Mr. S. D. Willard, of Geneva, N.Y., gives his experience with it of the past season as follows: "I find the Vergennes coming fully up to my expectations. As the

vines get age they seem to be more productive, and the clusters more full. It is one of the most superior keeping grapes we have."

Mr. G. W. Campbell, of Delaware, Ohio, also speaks favorably of it in the "Seventeenth Annual Report of the Michigan Horticultural Society, p. 226, where he says:—"The Vergennes is a handsome red grape, which has never failed here to bear and ripen well, though a little variable. It has generally ripened about with the Concord, but the past season it was a week or ten days later. This I attribute to the heavy crop, as it was allowed to over-bear. It however ripened both fruit and wood well. It has shown no rot, but the foliage has mildewed a little in unfavorable seasons."

Wishing that this grape should be still more thoroughly tested in all parts of Ontario, our Association has placed it on the list of plants for distribution in the spring of 1889.

A FEW HINTS ON LANDSCAPE GARDENING.—II.

"*Let not thy front look a-squint on a stranger, but accost him right at his entrance.* Uniformity also much pleaseth the eye; and 'tis observed that freestone, like a fair complexion, soonest waxeth old, whilst brick keeps her beauty longest."—*Fuller.*

THE Italian style of architecture was much employed some thirty years ago, and had many points of excellence. Additions could easily be made to the building without marring the unity of the design; while the arcades, balconies and projecting eaves gave character to a style which has been deservedly popular for country residences, because harmonizing so well in picturesque beauty with the rural landscape.

But it is not with a view of drawing attention to the style of architecture that we introduce this engraving of an Italian villa, but rather to impress our readers with the simple beauty of its surroundings. Here, as at the grounds at Ashton, the large growing trees are chiefly planted at the sides and rear, while the front has little to obstruct the view; however, instead of a simple lawn of green sward, which indeed is, in our view, most to be commended, we have here a few choice flowering shrubs near the front door where, of course, their beauty is seen to the very best advantage. This may be excusable in case of very choice shrubs whose beauty of foliage makes them attractive objects even when not in bloom, and where there is an extended lawn beyond the carriage drive. Generally speaking, shrubs should be planted either in connection with the flower garden, or grouped with herbaceous plants along the borders of walks and drives, and in remote corners of the yard.

They may be also employed as underwood to fill in the groups of trees about the grounds, or to break up into easy regularity a view otherwise too stiff and regular. No

FIG. 12.—ITALIAN VILLA.

inflexible rule can be laid down for such details of planting; so much must depend upon the size and situation of the place, and upon the taste of the planter.

The following are some of the more desirable shrubs for planting in Canada, arranged according to the months of flowering: April—Forsythia, Japan Quince, Missouri Currant; May—Wild Thorns, Azaleas, Lilacs, Tartarian Honeysuckle, Weigela, Syringa, Spiraeas and Flowering Almond; June—Red-Twigged Osier, Winterberry, Snowberry, Snowball, Rose Acacia; July—Fringe Tree, Elders, Privet; August and September—Alder-leaved Clethra, Strawberry Tree, Hydrangea Paniculata. There are many others, but these are the most popular. The Winterberry, or Black Alder, as it is also called, is far more attractive in fruit than in flower, the bright red berries hanging on the bushes nearly all winter, and being particularly beautiful.

Lawn vases, with Agaves or stiff foliaged exotics, are suitable on the verandah, or very near to the house; but out on the lawn among the shrubbery they are out of keeping with their surroundings.

The great importance of water in the attractiveness of a country seat is again well illustrated in the engraving before us, where a delightful walk leads the visitor along the bank toward a pleasant summer-house, from which a delightful prospect is before him. How many such possibilities are afforded us in Canada along our beautiful rivers and lakes, the advantages of which are wholly ignored by the residents in their neighborhood. We have in mind just such a lovely situation, the beauty of which has been wholly lostupon its unappreciative possessor. Inheriting broad acres of land, he had built an elegant house in a choice position on the shores of our beautiful lake Ontario, and having a bank on one side sloping down to a picturesque inlet; but he had so placed his barns, stables and outbuildings as to most effectually hide the pretty landscape, and blot the beauty of the whole situation.

CHOICE OF TREES FOR AN ORCHARD.

AT this season of the year, when many of our readers are being called upon by agents of various nurseries, a few words of advice may prove valuable.

First, with regard to patronizing the much-abused itinerant tree agent, we do not take the extreme ground which some do. There are, it is true, many rogues abroad who travel upon their own responsibility, and fill their orders with the culls from any nursery, refuse which would otherwise have been consigned to the brush heap, and which they could purchase for a trifling sum. Such men should not be allowed inside the door. The first question should be: "What nursery do you represent?" And if it is a reliable firm," the next should be: "Show me your certificate." This precau-

tion being taken, and the intending purchaser satisfied on the point of reliability, we see no reason why small orders should not be given a nursery through an agent. Certainly, a much higher price must be paid for stock so purchased than if bought direct, but on a small order the difference would be about equalled by the express charges, cartage, etc. In large orders for stock to plant an orchard, or a lawn and garden, much better terms can be had by dealing directly with some good nursery, either personally or by mail; and a better class of stock may often be secured.

Secondly, regarding varieties. The most common mistake is in buying too many kinds. Reading over a descriptive catalogue, or looking at the beautiful coloured plates shown by the agent, whose voluble tongue is naturally enough rendered the more active by the desire of securing a large order for his employer, the farmer is led to think he must have a few of every one of the much lauded kinds. For the home garden a collection of various kinds of fruits, new and old, is a source of much pleasure; but in the commercial orchard many varieties are but a hindrance to success. Upon this points a Massachusetts orchardist makes the following sensible observations:

"It is not unusual for a farmer to have, say, thirty or forty barrels of apples for sale made up of ten or fifteen varieties. Aside from the trouble of keeping these numerous sorts separate, and the bother with the comparatively large quantities of odds and ends which are left when filling the barrels, there is often difficulty in finding a market for some of the sorts which go to make up the collection. Buyers sometimes refuse to take apples which are really good, but with the qualities of which they are not familiar. There are a few sorts which always sell better than others, and which can usually be worked off, even when the market is glutted, at something like a reasonable price. The list varies somewhat in different localities, but it is easy to find which are the standard sorts in any given place. In this section (Western Massachusetts) the Baldwin is by far the most extensively sold, though the King, of Tompkins County, is eagerly taken at a higher figure. If I were to put out 100 trees to furnish apples for market, I would choose 55 Baldwins, 40 Kings and 5 Westfield Seek-No-Furthers. The two first-named I would sell to shippers, and work off the latter among the keepers of restaurants and fruit stands in the nearest cities. I do not claim that in point of quality these are the best varieties of apples, neither do I believe that for all localities this is the best selection, though it is certain that these sorts succeed in a large portion of the country. And I do not recommend this collection as at all adequate for supplying the family with fruit. But of the many kinds I have grown, and the still larger number which have come under my observation, I believe that for market purposes in this region the three which I have specified are by far the most profitable."

Of course the remarks about the most profitable varieties must be considered with reference to locality; and those which succeed in Massachusetts might be wholly unsuited to many parts of Ontario. The Baldwin, King and Westfield Seek-No-Further succeed well in Southern Ontario. The Baldwin is unequalled for productiveness, unless by the Greening, frequently yielding eight

barrels to a single tree; the King is a very scanty bearer, otherwise its large, beautiful fruit, so well flavored and so delicately perfumed, would stand far ahead of every variety, either for home use or for market. No apple, except the Newtown Pippin, now commands so high a price in the English market.

Among other profitable market varieties for Southern Ontario, we find from this season and last season's shipments to Britain, that the Gravenstein, Ribston, Blue Pearmain (also a scanty bearer), Blenheim Orange and Golden Russet bring the highest prices. Large, fine colored apples are much sought for, but the Northern Spy, though in this respect it is all that could be desired, has disappointed us. It is tender, and subject to rapid decay under unfavorable circumstances; and in consequence it arrived in Covent Garden wet and slack, though most carefully and tightly packed.

The old "Greening" is constantly advancing in the estimation of the English public. Although, as a rule, colored apples are sought for, this variety forms a worthy exception, and promises to bring even better prices than that staple variety, the Baldwin, of which probably more barrels are exported than of any other one kind.

The whole business of foreign shipments has this winter received a most decided reverse. About a million barrels had gone forward, up to Christmas, piling up the Liverpool docks until the market thoroughly broke down, and the best apples could scarcely be sold for enough to pay charges.

We still have faith in apple culture as one of the best farm crops, but have learned that it is unsafe to "put all one's eggs in one basket," and that the wisest way is to divide one's ventures.

BOTTLING GRAPES.

MR. W. COLEMAN writes to the *English Garden* as follows on this subject:—

Any dry, airy, well-ventilated store room will keep grapes, the great point being the maintenance of an equable temperature without the aid of fire-heat, which is not an essential so long as damp can be kept out and the temperature ranges from 35° to 45°. If bottles are used they should be placed in racks tier above tier, secured to the walls or partitions according to the number of bunches, whilst very small quantities may be stored away in glazed closets running along one end of the room when the latter is required for choice pears or general purposes. When in position each bottle should lean forward at an angle of 45°, space being allowed for the bunches to hang without touching the rack or each other. Then those who would keep an insidious enemy, mould from damp, under hand, may place a small slow combustion boiler outside for warming the internal pipes when absolutely necessary. So far good. Now for

CUTTING THE GRAPES, which, by the by, must have been thoroughly ripe by the middle or end of Septem-

ber, otherwise the effort to keep them fresh and plump will be disappointing and worse than useless. Having fixed and filled a sufficient number of ordinary wine bottles with soft water, and warmed the pipes for a few days to dry the walls and floor, on a fine calm day with a pair of pruning scissors cut the grapes with all the wood close back to the pruning bud; convey them steadily to the room, insert each piece of wood with bunch attached into a separate bottle, but carefully avoid forcing out the water in the operation. Never shorten the wood beyond the bunch, as each fresh cut converts it into a syphon, through which the water in the form of vapor passes from the bottles into the room, carrying with it more or less of the saccharine matter stored up in the berries. In the arrangement of the different varieties, late keepers like Lady Downe's should be placed most out of the way upon the upper tiers; then Colmans, Muscats, Alicantes, and those excellent varieties, West's, St. Peter's and Mrs. Pearson, should follow. It will be necessary to dry the room thoroughly before it is closed, and then the grapes will require occasional examination for decaying berries; but if thoroughly examined at the time of cutting they will keep much better in the room than in the best managed vinery. When all the grapes are bottled they must never feel the want of water, neither must they be shaken or disturbed if it can be avoided, as waste can be made good by the use of a small long tube-spouted can suitable for passing oil into machinery. Some grape growers put a small piece of charcoal into each bottle at the outset and change the water occasionally, but all this extra care is superfluous, as many years' experience proves that the grapes keep quite as well in the original water and without the charcoal. Changing the water, of course, can do no harm, always provided the grapes are carefully handled; therefore, when a portion of the bunches have been used the bottles they occupied may be emptied and refilled preparatory to the transfer of the latest keepers. In the arrangement of the different varieties I may say Muscats and Gros Colman should occupy the driest and best ventilated part of the room, especially when the bunches of the latter are large and the shoulder stalks are green and fleshy. Again, in using them the largest clusters most subject to damp and mould should be taken first, as smaller pieces through which the air can pass freely are best adapted for keeping.

FRUIT GROWING ON CLAY LAND.

By B. W. Parker, Tyneside, Haldimand Co., Ont.

IN giving the result of my experience in growing fruit on clay land, I will state that my land is a heavy clay loam; fifty bushels of oats and thirty bushels of barley would be about the average yield to the acre this year; peas as high as thirty bushels; fall wheat, when a good crop, twenty-five to thirty bushels. I was told when I purchased my farm, that fruit would not do well on this land. However, I concluded to try it; I looked more to the climate than to the land. Now I am glad to say, after six years' experience, that we can produce choice fruit of most kinds. I have twenty-six varieties of apples in full bearing, which makes a good family orchard.

Pears are peculiarly well adapted

to this soil and climate. I have planted the Bartlett and Duchesse; have fruited the former; have seven other varieties; all do well and are perfectly hardy. In my experimental garden I planted last spring twenty-one varieties of plums; twenty-three of grapes; some quinces, apricots, and eight varieties of peaches; the latter are by no means sure croppers, but when there is a large crop at Grimsby we have them too. The Concord grape does well here, and the fruit is better in flavor than when grown on sand. The Niagara is tender in the bud, more hardy in the root, but it is not a sure cropper. The Brighton I have not fruited to any extent as yet, but the few bunches we had were delicious; the flavor is all that is claimed for it—no mildew, and is quite hardy. In strawberries I do very little growing, only a few for the table; but the Downing, which I planted on a little sand bed, were not nearly so sweet as those grown on the clay. Gooseberries do well here; I have Downing, Smith's Improved, and a large English variety, which is not the Whitesmith, if I should judge by those I saw in the grounds of our Vice-President; it was on the place when I came, and is a great cropper. I have fruited it six years and seen no mildew. In black caps I have the Gregg, Mammoth Cluster and Souhegan; the Gregg is slightly tender, but the berries are so fine and large, though not as good in flavor as Mammoth Clusters or Souhegan; the two last named are perfectly hardy here. The red berries I only grow for home use, as they are hard to start in a dry season. I have the Cuthbert, Turner, and Marlboro', the last named of which does extra well. I trust, Mr. Editor, I have not taken up too much of your valuable space, but having read so often with pleasure in the HORTICULTURIST the experiences of others in fruit-growing on light soils, I thought I would give the result of mine on the clay.

ON THE DESTRUCTION OF THE PLUM CURCULIO BY POISONS.

ONE of the most important results to fruit-growers of recent studies in economic entomology, is the demonstration of the fact that injury to plums by the Plum Curculio can be prevented, to a great extent, by spraying the trees early in the season with Paris green or London purple mixed with water. This fact, I believe, was first ascertained by practical fruitgrowers, who, finding good results from the use of Paris green against the Codlin Moth, jumped to the conclusion that the Plum Curculio could be destroyed in the same way. At the time this was done the known facts in the life-history of the Plum Curculio did not warrant any such conclusion. In truth, the entomologists were mostly inclined to say that injuries by this insect would not be prevented by an application of Paris green to the trees. It was urged that, as the eggs of the Curculio were placed within the tissue of the fruit, the newly hatched larvæ would be beyond the poison applied to the surface. In this respect this insect differs from the Codlin Moth, which lays its

eggs upon the outside of the apple at the blossom end, in such a way that the young larvæ when eating its way into the apple is liable to be poisoned, if poison has been sprayed upon the tree.

Notwithstanding this important difference in the habits of the insects, certain fruit-growers claimed that equally good results followed the spraying of plum-trees as in spraying apple-trees. At last the matter has been made the subject of careful experiment by Mr. C. M. Weed, the Entomologist of the Ohio State Experiment Station. The results of Mr. Weed's experiments are very striking. They seem to show, so far as the results of a single season's work with a single variety of cherries can be relied upon, "that three-fourths of the cherries liable to injury by the Plum Curculio can be saved by two or three applications of London purple in a water spray (in the proportion of one ounce to five gallons of water) made soon after the blossoms fall."

No explanation is made by Mr. Weed as to the way in which the poison acts, — whether the adult beetles are destroyed before they lay their eggs, or whether the poison reaches the larvæ. During the present season we have made some observations and conducted an experiment which indicate that the former is the case.

During the latter part of the past summer my attention was attracted to a serious injury to the fruit in an apple-orchard through which I passed daily. A large proportion of the apples in one corner of the orchard had been eaten into by something which made small pits from one-eighth to one-fourth inch in diameter, and of about the same depth. On one tree nearly every apple had been attacked, and in many cases there were ten to twelve holes in a single apple. The injury was so serious as to render the fruit on this part of the orchard unmarketable.

The holes in the apples were first observed during the latter part of August. At that time many of them were partially grown over, while others were fresh, indicating that the pest had been at work for a considerable time and was still active. As the injury to the apples resembles somewhat that caused by *Lithophane antennata*, a climbing cut-worm, that sometimes infests apples in Western New York, I at first searched for caterpillars and gave little thought to the Plum Curculios that I frequently found hiding in the holes in the apples. But after finding a considerable number of these insects in these pits, it occurred to me that they might be the cause of the mischief. Several perfect apples were then selected and placed in breeding cages, in each of which were confined several curculios. The question was soon settled: within twenty-four hours the beetles had begun to eat into the apples. They made small holes at first, but these were soon enlarged so as to form pits of the size indicated above. We thus see that the Plum Curculio is a voracious feeder, and conclude that the spraying of the plum-trees early in the season with Paris-green water protects the fruit by the destruction of the adult curculios before they have laid their eggs.

Since preparing the above I have received the following note from Mr. Weed, for publication in a journal of which I am Entomological Editor. I take the liberty of publishing it here in advance of its appearance in that place, as it confirms my conclusions.

"In referring to some experiments made by me to prevent curculio injuries, in the August number of the *American Naturalist*, the question is raised as to how spraying with poisons may have a preventive effect on this insect. I believe that satisfactory explanation may now be given. Early last June I confined an adult Plum Curculio in a jar with a large green plum, and was surprised at the avidity with which the fruit

was eaten. A large portion of the surface was gnawed out for food, and not for purposes of oviposition, and the feasibility of poisoning the adult beetles by clothing the fruit with poison clearly shown.

"But even more satisfactory breeding-cage experiments were made in Illinois by Professor Forbes, who informs me that he has found that, besides gnawing out the fruit, the adult curculio eats freely of the substance of the leaves. He adds that the curculios 'are certainly very freely exposed to destruction by poison, without reference to their habits of oviposition or the first food of the larvæ;' and that he has 'also learned experimentally that spraying the leaves with Paris green would poison the beetles completely.' Professor Forbes discussed at some length the details of his experiments, which confirmed the conclusions reached in my experiments, in an address delivered at a meeting of the Central Illinois Horticultural Society during last August (*Prairie Farmer*, Aug. 11, 1888). Professor A. J. Cook of the Michigan Agricultural College also announces in Bulletin No. 39 similar results."

Little remains to be said except to congratulate the fruit-growers that at last we have at our command an easy means of destroying this very troublesome insect. We will add, however, for the sake of those who are not familiar with the use of Paris green upon fruit-trees, that the poison is mixed with water in the proportion one pound to one hundred gallons of water, and applied by means of a force-pump furnished with a spray nozzle. The application should be made early in the season, soon after the appearance of the leaves and blossoms, and should be repeated if the poison is soon washed away by rains.

Careful experiments have shown that there is practically no danger in the use of poison on fruit-trees in this way, as it is all removed by the summer rains before the fruit matures.

JOHN HENRY COMSTOCK.

(*In Bulletin, No. III., Cornell Ag. Ex. Station, Ithaca, N. Y.*)

THE VEGETABLE GARDEN

THE CULTURE OF CELERY.

BY W. S. TURNER, CORNWALL, ONT.

A GREAT deal has been written on this subject in this Canada of ours, and there seems to be a general belief that it is quite a serious undertaking to grow celery to perfection.

Now I want to show in my humble experience, at least, this is not the case, for it is as easy to grow as any other vegetable, has fewer insect enemies, and what is not of the least importance to those who have a small area of ground, *it can be grown as a second crop.*

For instance, I have grown 700 heads in the space of less than 100 square feet, and nearly all as a second crop.

Where there is command of any quantity of water as it is common in many of our large towns, (for quite a number of places are now supplied with water-works) it is still a greater advantage—though I would here cor-

rect a very common error that some new beginners are apt to fall into, and that is this, that celery, being naturally a water plant, you cannot give it too much. This is a great mistake, for you can actually drown it out, kill it with kindness, "Drown the Miller," as the Scotch folks say; for instance, the past season has been exceptionably wet in Stormont Co., there has been very little need of artificial irrigation, in fact, the plants have appeared to be at a standstill for weeks at a time, the water from the heavy rains sometimes filling the ditches between the rows and inducing rot among the plants. If my garden had not been well drained I would have lost a large number of heads; even as it was my celery was not so large as in former years when there was an average rainfall.

Having bored your readers thus far, Mr. Editor, I will proceed to show the *modus operandi* of starting the seed and follow the plants right up to harvest time.

I always grow two kinds at least, viz., fall and winter celery. The White Plume for fall, and Henderson's Pink, or Sutton's Sulham Prize, for winter use. The White Plume is of beautiful appearance and is greatly in demand on account of its earliness and beauty. It will keep good up to Christmas, but the pinks or reds are superior to it in flavor and will keep all winter. There is a new candidate for public favor named Nelles' Self-Blanching; it has been grown by Mr. John Croil, one of our directors, and he pronounces it of excellent flavor.

I sow the seed in boxes in the house about the middle of March or the first of April. A raisin box cut down to about five inches deep is about the handiest size. I usually put some fine garden soil in the cellar for the purpose in the fall just before the winter sets in. I then fill the box with soil to within an inch of the top, and if you are not careful at this stage you will lose more than half your seed, for celery seed being very small, it is apt to get too deep and either gets lost entirely, or comes up so spindling and weak as to be comparatively worthless.

I sift the soil for the upper part of the box, compact it moderately and see that it is even. Now sow the seed in rows two inches apart, and the rows half an inch wide, press the seed lightly with a piece of board the size of the box, then sift a very thin sprinkling of soil over the seed. If possible, I get a little moss off the cordwood pile, dry it, and rub it fine through the hands, and scatter a thin layer on the top, then water with a fine sprinkler and put it in a sunny window.

The seed will be about ten days or two weeks in germinating. It is then necessary to watch and see that the sun does not injure the young shoots at this stage, as they are very tender. If the sun is too strong, shade them a little till they get stronger.

When the second leaf appears, I take the box and put it into a moderate hotbed, and, as the warm weather comes, from there into a cold frame, and gradually harden them off till they will endure the weather without any protection. When the plants get about two inches high, prick them out five or six inches apart into a bed, or between the rows of beets, carrots, or anywhere so that you can cultivate them with a hand-weeder, or scratch among them with an old

three-pronged table fork; keep them well watered, and by the 1st of July they will be fine plants with good roots to them. By this time, our early vegetables such as peas, beets, lettuce, beans, early potatoes, and even old beds of strawberries have had their season, and we can make good use of the ground for our celery.

Now get two garden lines, and put them about twelve inches apart, the length you want to make your rows, having your rows four feet apart, dig your trench between the lines and about nine or ten inches deep, now put four inches of good *old* manure, and with your garden fork dig it under and mix well with the soil, put an inch or two of soil over this, and your trench is ready (which by this time is not much of a trench after all) for the plants. Now take your garden trowel, cut round your plants, and put them in about the same depth as they were before moving, they will hardly know they have been moved; though it will do them good to have a little watering at this stage, and whenever they get too dry. They will appear to be at a standstill for quite a while after this, but they are forming new roots all the time, and getting ready for business later on. As you cultivate and scratch among them, bank them up a little at the same time by taking hold of the plant in your left hand, and drawing the earth around them with your right; you do this so as to prevent the soil getting into the heart. If you want extra fine celery and clean also, tie a soft string loosely round the plant when it is about half-grown, this will keep the leaves together and expedite the banking-up business considerably. If you are limited to room you may have your rows closer, and after the celery is about three quarters grown, place boards close on each side of the rows, and put stakes behind to keep them up. The celery will bleach just as well as if banked up to the tops, as all that is required to whiten celery is to exclude the light.

NOTES FROM SISTER SOCIETIES.

Cultivation to Withstand Drought—The Bubach Strawberry—New Mode of Refrigeration for Fruits—Chemical Composition of Fruits—Needs of the Soil for Profitable Fruit Production—Fertilizers—Grape Rot.

THE Ohio State Horticultural Society met at Troy, Dec. 12, 13 and 14, and was a great success. One point proved was the *importance of cultivation in dry seasons.* Mr. W. J. Green said that at the O. Ex. Station, irrigation had been found impracticable, the chief reason being that water is too expensive. One and one-fourth inch per acre, which is about the amount of a good shower, is equal to one thousand barrels or one hundred two-horse loads, and costs in Columbus seven dollars and fifty cents. Mulching, too, sometimes fails. The best plan seems to be cultivation. Experiments in Illinois and Connecticut show that half an inch of rainfall may be saved per week from evaporation by stirring

the soil every alternate day. A man and horse can cultivate two and a half acres per day, equal to five acres every alternate day. If by cultivation one inch of water per month can be saved from evaporation, there need be no fear of drought except at one or two periods like the strawberry season.

Reports on *grape growing* for profit were very discouraging. The crop east of Cleveland was about five hundred carloads, and Concords realized only about 1½ cents per pound. Among *strawberries* the general opinion was that Bubach should head the list.

The "*Relation of Refrigeration to Horticulture and its Importance in Commercial Fruit Growing*," embodied the observations made by the essayist, Mr. Cushman, in a visit to the cold storage warehouse of the Cleveland Automatic Refrigerator Company. The fine fruits seen there leave but little doubt that in the future cold storage is going to play a prominent part in horticultural industry. It is well known that if the spores of rot can be kept from developing, organic bodies may be preserved for long periods. The main factors in doing this are coldness, absence of light, and dryness, the last of which has caused most difficulty in all systems where ice is used. The system practiced in Cleveland is briefly as follows: Aqua ammonia is reduced to an anhydrous condition; and this gas is reduced by steam pressure to a liquid state. It is then passed through pipes in the chambers, which are surrounded by dead air spaces, where it volatilizes and thus produces a low temperature. It then returns to the condenser and is used again. A very low temperature may thus be produced and maintained. Dampness, instead of causing decay, becomes condensed on the pipes. The system is probably the nearest to perfection of any yet introduced.

The "*Chemical Composition of Fruit*," was the topic of a suggestive paper by Professor Lazenby, of the Ohio State University. In this paper it was shown that the art of horticulture consists in transforming, by means of cultivation, crude and worthless materials into substances mainly useful and wholesome fruit products. Progress in horticulture means an ever increasing insight into and a better understanding of the laws which govern the desired transformations. It means a better knowledge of how plants grow and how they feed.

The sciences of botany, chemistry, and geology have all contributed much toward this end. Of the three sciences named perhaps chemistry plays the most important part, being most intimately connected with and concerned in their changes in material substances which the horticulturist is constantly endeavoring to effect.

One of the lessons to be derived from chemistry is *the needs of the soil for profitable fruit production.*

It is well known that every plant, large or small, herbaceous or woody, is composed of certain elements, whereof by far the larger portion comes from the atmosphere, a much smaller, though constant and no less essential part coming from the soil. The elements which are absorbed from the atmosphere are usually found in abundance and are yielded freely to all growing plants. If the roots are duly supplied with mineral and nitrogenous substances, together with a sufficiency of moisture, the rapid and perfect development of leaves, the organs of atmospheric absorption will secure whatever can be obtained and is needed from the air.

The really important question, therefore, is this: "Are the necessary elements that are furnished by the soil usually present in such quantities and under such conditions that the wants of the plant are fully supplied?"

In answer to this it can be safely asserted that there is scarcely a single square rod of land within the borders of our country so rich in all the elements of available plant food that the production therefrom of fruit or vegetables could not be increased

by some application of fertilizers. The intelligent, practical horticulturist can not fail to ask himself the following question: "Wherein is my soil originally deficient and upon what elements have the largest drafts been made by subsequent cropping?" Can chemistry help us to an answer? Let us consider. We may not have much to hope from the analysis of soils, and it is doubtful if this will ever do much more than furnish hints as to what may or may not be required. On the other hand we have much to hope from the analysis of plants and fruits. To illustrate: The stems, branches and leaves of different fruit trees contain comparatively large quantities of lime and potash, substances that are not infrequently lacking in our soils.

Chemistry also tells us that our fruits, especially those that bear large quantities of seed, contain a considerable amount of phosphoric acid. An average of several trustworthy analyses of the seeds of the grape give in every 100 parts of the ash, 29 parts of the ash, 29 parts of potash, 34 parts of lime and 24 parts of phosphoric acid.

From this it seems plain that the roots of our fruit-bearing plants must be duly supplied with these mineral ingredients. The three substances named above, together with nitrogen, which is taken up by the roots in the form of ammonia or nitrates, must be in some way furnished to all growing plants. The farmers', gardeners' and fruit culturists' partiality for barnyard manure in preference to most, if not all, commercial fertilizers, is because when well made and well preserved it is an almost complete plant food, a large portion of which is in an immediately available condition. Next to farmyard manure, according to the teachings of chemistry, unleached wood ashes is probably the best fertilizer for fruit gardens and orchards. Lime probably stands next, where the soil is deficient in this element, and phosphates or fine ground bone whenever the soil has become despoiled of phosphoric acid.

As a remedy for *grape rot*, Mr. Geo. M. High said that after careful experiments, he has concluded that the best remedy is the following: "Dissolve one pound of sulphate of copper (blue vitrol) in two or three gallons of hot water. When cold add one pint of spirits of ammonia. Pour off the clear liquid and add to what remains 20 to 25 gallons of water. Begin spraying about 10 days before blossoming time."

NEW FRUITS.

AT the last meeting of the New Jersey Horticultural Society, Dr. J. B. Ward, as a member of the special committee on trial of new fruits, mentions the following:

Golden Queen raspberry very prolific, a strong grower, of excellent flavor. Its wonderful suckering tendencies, and its color are against it. Not good for market. The Crystal raspberry is four or five days earlier and handsomer, and of bright yellow or straw color; perhaps it is not quite so prolific. Introduced by Caywood. The Cohanzick strawberry is a complete failure. Fruit hard and very acid, and not to be recommended. The Minnewaski blackberry holds its own, and even improves on acquaintance. It ripens with the Wilson. Fruit larger, very sweet; vines very prolific and hardy even in exposed locations. No rust or double blossoms noted about it yet. Holds its color well. Mr. J. T. Lovett says the market rejects all but a bright red variety. Fashion in a measure controls the market.

The Golden Queen raspberry is only good for family use. On the subject of worthy fruits, new or old, Mr. W. R. Ward says that some of the old fruits, which are not yet much disseminated, are as good as new ones, and can often be grown with as much profit as any, new or old. Old varieties are often new to some people. The Kieffer has been growing in popularity. At the start too much was claimed for it. Growers now concede it to be a good cooking, and a good market fruit, and profitable. His Kieffers sold in market for $1.40 per bushel, and Anjou for $1.65. Yet the Kieffer, one year with another, produces double as much as the Anjou.

The less in ripening is very small and the tree is not subject to much injury from insects. The fruit is valuable for New Jersey. Dana's Hovey is in many respects the opposite of the Kieffer—one of the oldest, yet very little grown. It is of highest flavor and deserving widest dissemination. The Quinn pear is also one of the very best—late and a very good keeper. The Lawson tree is a good grower, but he could not say anything in regard to its fruit. Many strawberries have recently been introduced, but few are receiving field culture. The Jessie is one of them, doing especially well on a heavy soil. Its popularity is on the increase.

Schaffer's Colossal raspberry is discarded on account of its color. Cuthbert and Marlboro take its place. The latter is considerably earlier than the Cuthbert, hence does not come in competition with it and is gaining in popularity. Fay's currant is sustaining its reputation and the claims made for it by its introducer or originator. He has some bushes three years old, that yielded as much as twelve quarts each, and the fruit sold for 10 cents a quart. Of cherries the Montmorency and English Morello are good, and yet not generally grown. Moore's Early grape is one of the very best early black sorts in cultivation. It comes to the market when that is yet unsupplied with grapes; or at the same time with green Ives, Champions or Concords from Delaware and Maryland. Last season it sold in Newark for eight cents per pound, while Concords in their season brought only four cents. It takes the place of the Ives, and is much better and more acceptable.

Mr. Beebe praises Grimes's Golden apple, that has never been pushed half as much as it deserves. The Wagener also is hardly disseminated and yet it is one of the finest apples. He is disgusted with many of the Russian apples. The Canfield is a tough, sweet apple, perhaps good to cook or for cider. J.T. Lovett thinks the Russian apples should not be condemned in this fashion. Yellow Transparent is good. Being asked about the Delaware Winter apple, he says he is quite confident that it is identical with the Lawyer; but even this is not much known. Mr. Wilcox says it is a good keeping apple, but never becomes good to eat. Quality always very poor. Grimes's Golden is praised by Mr. Lovett. We have condensed the most of the above notes from a report in our estimable contemporary, the *Rural New Yorker*.

THE BANANA.

THIS fruit is now so common in our fruit stores, and so much used as a desert fruit, that a little information concerning its growth may be interesting to our readers. Every one knows how refreshing the banana is to hungry railway passenger, how its flavor, at first too sweet and insipid to be relished.

soon begets a taste that enables one to highly appreciate it, and how nourishing an article of diet it is acknowledged to be; but few of our Canadian growers of the apple, pear and peach know anything about growing bananas. The following particulars are from the Philadelphia *Press*:—

BANANA PLANT IN FRUIT.

The stem or trunk of a banana is about fifteen feet high, and of a pithy nature. It reminds me of an overgrown corn stalk, although the joints are not so plainly marked. The sheaths, indicating leaves which have fallen off, are faintly visible from the ground almost to the top. The stem is eight or ten inches in diameter at the base and diminishes very slowly toward the top.

The leaves, of which the number varies, do not spring from the trunk as do the limbs of trees, but encircle the stalk, forming a kind of sheath, which, as it grows, partakes less and less of the nature of a sheath, until, springing upward and outward, it forms a stem and leaves the stalk or trunk. The stem, itself, is of peculiar form, having, near its base, a circular under-surface while through the upper surface runs a groove. This form extends some eight or ten inches, when the groove disappears and the stem presents a circular appearance.

The leaf is of a deep green color, regular in form and about ten feet long by two or three in width. Several of them spring in a bunch from near the top of the stalk and hang in graceful curves on all sides.

Directly from the top projects a sort of stem upon which the fruit grows and ripens. As the fruit matures this stem is inclined downward, sometimes hanging parallel with the trunk. This stem is from three to five feet long, and the fruit which it produces much resembles the paw-paw in shape and color. At the extreme end of the stem hangs a beautiful flower of purplish hue, the faint perfume of which we were denied by its inaccessibility.

Such is the appearance of the banana plant. There is no doubt that in its native home its foliage is much more luxuriant and its beauty much enhanced.

From conversations had with parties who have visited its native clime its cultivation is as follows: The plants are set out about ten feet apart. So rapidly do they grow that in eight months a crop is ready to gather. During this time suckers have been springing up from the base. All but two or three of these are destroyed. A second crop from the old stock is harvested when it is cut away to make room for the new ones, which contribute each their bunch of bananas about eight months later.

This process is kept up until the ground is exhausted, when a new planting in a different place is made and the process is repeated. The bananas, being gathered while yet green, are able to reach foreign markets in good condition. There they are ripened under different processes.

From Our Exchanges.

Tree and Man.

THE tree, like the human being, belongs to some especial race and family; it has skins and veins and blood; it has its antipathies and loves; its flowers and fruit correspond to his words and actions; it fills its appointed place and does its work among its fellows. Some trees, like some men, diffuse about them beauty and gracious influences, while others fulfil hard and severe uses. They live, like men, in company or in gloomy solitude. Moreover, to every tree as to every man, comes at last the hour when it must disappear and give place to the vigorous young sapling which springs from its roots. A tree, to be healthy, requires both food and fresh air at the roots. When the ground is barren of nourishing juices, or is packed and clammy, the tree shrinks and grows poor and meagre.

The thoughts of a man are the roots of his life. If he does not draw strength and knowledge up with them, his life will grow lean and poor. Or, if his thoughts are confined to a too narrow circle, if they are not aired by reading, or travel, or contact with other minds, the same effect will be produced. The whole man will shrivel, and his fruit of good deeds will be scanty.

A tree, too, needs to be washed and kept clean by the rain from Heaven, in trunk and leaves, or it will not grow. The boy whose heart and mind are covered with the dust of the world—the puerile, worthless cares and gossips of every day—and never are washed clean by contact with great thoughts of God's goodness and power, will dwindle into a petty, insignificant man. The leaves, too, need sunshine, just as the man needs cheerfulness and joy in his life. Neither tree nor boy will be healthy or sound at the root if the surrounding atmosphere is always dark and murky. No tree can have its place taken by another while it still lives. Neither can any man do another man's work or fill his place. Tom may be a giant in body and intellect, and Joe a dwarf, but Joe has his little word to speak and fruit to ripen, and no man can do it for him. But when the work is done by tree and man, and death comes to them, God certainly and quickly fills the place of both. A great oak sometimes falls in the forest, and we are amazed to see how shallow and small was the hold of its roots in the earth. It is taken away and the grass and young saplings in a few days hide the scar.

A great man falls and the nation is shaken to its centre. But other men take up his work and fill his place. The hardest lesson for a man to learn is that while no man can do his work for God while he is here, it will go on without him when he is gone. Humility, says St. Basil, is chief of all virtues, for it is the one which only death teaches us.—*Youth's Companion*.

THE women of California are finding profitable and steady employment in fruit culture. Picking, packing, making raisins and canning fruit as well as crystallizing figs and apricots are largely done by women. Not a few of them are owners of fruit farms, which they carry on.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

The Dominion Farmer's Council and the Fruit Growers' Association.

A COMMITTEE from this Farmer's Club, which meets monthly at London, Ont., recently visited the Ontario Agricultural College at Guelph. Mr. Deadman, the member of the Committee who reported on the Horticultural department of the College, stated at a recent meeting of the club, that this department was a "*total failure.*" The chief cause of failure he attributes to portion of the farm chosen for the orchard, and fruit gardens; it being the lowest on the farm, very wet in spring and fall, and subject at times to great overflow of water. Neither was it properly drained before planting, only a two-foot drain being used, and this now out of working order. He further says, "We do not blame the present authorities for this, as Mr. Forsyth informed us that it was choesn by a deputation of the Fruit Growers' Association, Mr. Saunders and Mr. Beadle being members of the committee." Prof. Robertson, being present, said that "in justice to the Fruit Growers' Association he was forced to say that the selection of the site for the orchard was made by that body in winter, when there was fully two feet of snow, and that, at that time, the ground presented a much higher appearance than it really had."

Now, there is no doubt that the Committee's report is correct in regard to the unfortunate location of the orchard and fruit garden; if it was a serious blunder to locate it so unfavorably, it is also a serious blunder to lay upon the Fruit Growers' Association the blame of that location, much more that for neglect of proper drainage.

The following letter from Mr. Wm. Saunders, Director Experimental Farm, Ottawa, a member of the committee from our Association, places the affair in its true light; and will, we hope, prevent a repetition of unjust censure in this matter in the future.

"In some strictures made in a report to the Dominion Farmers' Council, on the Fruit Department of the Agricul-

tural College at Guelph, in *The Farmers' Advocate*, the statement is made, that the ground selected for the fruit trees, which had proved such a failure, was the choice of a deputation of the Fruit Growers' Association, including Mr. D. W. Beadle and myself. In justice to that deputation, I would say that this field was not our choice, that we endeavored to induce the Professor of Agriculture to place at our disposal some higher and drier ground, without avail. The more suitable fields were all under experimental crops, which could not be interfered with, and this was the only one to be had at that time for the purpose. It looked better than it really was, the ground being covered with snow at the time; further, we were assured that it could be easily drained and that it would be thoroughly drained the following spring: with this understanding we consented to the use of that piece of land for the purpose. Frequent representations were subsequently made by us as to the necessity of draining this field and the certainty of the failure of the trees if it was not drained, but I believe no attempt was ever made to carry out the promises given to the deputation in this particular. Had this been done I believe the orchard would have proved a success. I see no reason why the hardier varieties of apples should not succeed on the College Farm at Guelph, if high or well drained land were selected for the purpose."

Hardy Peaches.

Mr. E. A. Riehl, Alton, Ills., says he lives on the very northern limit of the peach belt, where such tender varieties as Crawford, Wheatland, Christiana, Reeves, and others are too uncertain to plant with any prospect of yielding paying crops. He has been experimenting with several varieties of the Chinese strain, and likes them very much for market purposes. He found the Chinese Cling, Gen. Lee, Thuber and Family Favorite hardy in bud and blossom, very large and good keepers and shippers, hence profitable. In quality, however, they are but second rate.

He says that Amelia is the best early peach he ever grew, ripening before Early York, a very large and productive peach. He always speaks highly of Wilkins, Great Western, and Shipley's Late Red.

Success in Treating Brown Rot.

Mr. F. L. Scribner says in *Orchard and Garden*, that we need no longer dread the Brown Rot, a result of the presence of Downy Mildew, because it may be prevented by the use of Sulphate of Copper Compounds. He gives the experience of Mr. Geo. High of Middle Bass, Ohio, in treating this disease with *eau celeste*, as follows :—

Mr. High used *eau celeste* treating a number of varieties, chiefly Catawbas. The apparatus used was a Nixon barrel force pump and sprayer, with a No. 4 nozzle of the same maker. First application was made June 7, about 10 days before bloom. One half the vineyard, the east side embracing about 2,000 vines, was again sprayed June 18. The blossoms were just falling off at this time. To the same part applications were repeated July 6, July 18 and August 7. This lot of vines showed hardly any signs of mildew or rot up to August 16 (date of report). Some 2,000 vines adjoining which were left untreated had lost, up to same date, from one fourth to one-third of their berries by rot, and their foliage was much injured by the mildew.

The 2,000 vines on the west side, treated with the east lot June 7, were treated again June 25, July 14 and Aug. 7. This lot rotted slightly but not to an extent exceeding 2 per cent. of the crop.

The season throughout was warm and moist. At no time has the ground

been dry; all the conditions were particularly favorable for the development of mildew and rot. The applications of *eau celeste* saved both fruit and foliage in an almost perfect condition. Mr. High says in so many words that he does not believe there is a vineyard of Catawbas on North Bass or Put-in-Bay Islands which has not lost by rot and mildew from 1-4 to 1-3 or more of its crop, while on his *eau celeste* treated vines the loss will not amount to one per cent.

Cost of material per acre for each application, was 30 cents :

2 lbs. sulphate of copper
1 qt. of liquid ammonia
56 gallons of water
} Amount used per. ac; vines planted 6 x 7 ft.

The Barrel pump and sprayer cost $35 —exclusive of freight. No price given for labor; but with the apparatus used two men and a horse were required, the spray being applied just as fast as the horse could walk through the rows.

Mr. High concludes his report by saying that "had we applied the *eau celeste* to our entire vineyard, it would have been hundreds of dollars in our pockets."

The American Pomological Society.

THE twenty second Biennial Session of this important Society will will be held at Ocala, Florida, February 20th, 21st and 22nd, 1889. We very much regret that the change of date causes that meeting and our Winter Meeting to occur at the same time, because our Association ought to have some delegates at the meeting in Florida. The Executive Committee have tried faithfully to arrange our meeting for an earlier or a later date, but difficulties presented themselves on all sides, so that it was found impossible to make any change—a great disappointment to the writer, as well as other members of our society who had counted much upon the trip to Florida.

The following is a copy of the preliminary circular :—

At the last meeting in Boston, the Society unanimously accepted an invitation from the Florida Horticultural Society to hold its next meeting in that State. This will be the first time that a meeting has been held in the extreme South. The enthusiasm with which the proposition to go to Florida was received, and the extensive preparations being made by the Pomologists of the South for the reception of their Northern friends, give promise of the most successful meeting ever held.

The session will open at 10 o'clock, on Wednesday, February 20th, and continue three days. It was expected to hold the meeting at Sanford, beginning February 6th, but it has been found necessary, owing to lack of time for suitable preparation, to postpone it until the 20th, and at the request of the Florida Society, to hold the session at Ocala instead of Sanford. Ocala is located in the central part of the Peninsula, in the midst of the Orange Region, nine-tenths of all the oranges grown in the State being produced within a radius of eighty miles. The climate is salubrious and healthful. No cases of yellow fever have occurred in that region, and the direct railroads leading to Ocala from the North pass through none of the districts where it has existed. No fear, however, need be entertained of visiting any portion of the State on this account. Since the occurrence of severe frosts the last quarantine, that of Jacksonville, has been raised, and the tide of winter travel has now set in.

Among the attractions offered by the people of Ocala, as inducements to hold our meeting there, are the Florida International and Sub-Tropical Exposition, which opens in January, the commodious buildings of which are tendered for the use of the Society. The leading places of interest in the State are easily accessible from this point, and the local attractions include the famous groves of Lake Weir and Dunnellton, and the wonderful Silver

Springs, the finest of the kind in the world.

Arrangements will be made for unusually low rates on roads entering Florida, and for excursions within the State. Full particulars in regard to these will be announced later. Where no other arrangements exist, delegations should secure special rates to Ocala from their nearest member of the General Passenger Agents' Association.

It is hoped that all Pomological, Horticultural and Agricultural Societies in the United States and British Provinces will send delegates, in such numbers as they may deem expedient, and all persons interested in the cultivation of fruits are invited to be present and become members of the Society. Persons so desirous can remit the fee, four dollars for biennial membership, or twenty dollars for life membership, to the Treasurer of the Society, Mr. Benjamin G. Smith, Cambridge, Mass., who will give a receipt for the same, entitling the holder to all the courtesies in the way of reduced railroad and hotel rates, etc., which are accorded to members. It is desirable that the Secretary be notified as soon as practicable of the number of members expecting to attend, in order that proper arrangements may be made for their reception.

A special invitation is extended to ladies to attend the meeting, become members, and take part in the proceedings. An attractive programme is in preparation, a full account of which will appear later. It includes papers and discussions by the best Pomologists of the country upon new fruits and methods of cultivation, and problems of judging fruits, of transportation and marketing, diseases and their remedies, and the origination and introduction of new varieties.

The Society offers no premiums for exhibits of fruits. Several special prizes, however, are offered by the Florida Horticultural Society for exhibits to be made at the meeting, the awards to be made by a committee appointed from the American Society. The usual awards of Wilder medals will be made for objects of special merit.

A. A. Crozier, *Secretary*,
Ames, Iowa.
Prosper J. Berckmans, *President*,
Augusta, Ga.

Note—Until the Florida meeting, the address of the Secretary will be at the Department of Agriculture, Washington, D. C.

Horticultural Exhibitions.

Mr. M. H. Battles, of Philadelphia, writes in the *Garden and Forest* upon the above subject, and makes some very sensible suggestions, for their improved conduct and increased usefulness. In brief, his ideas are to have the hall beautifully decorated with greenery, the tables covered with moss, and draped in front with cloth, with eyelet holes for hanging, which could be used for a number of years. Grapes are to be hung up, and the "bloom" to be made a strong point in judging; and as for vegetables, that only remarkable specimens be admitted. The local papers are to be well treated, and frequent notices secured. Two orchestras are to be engaged to give promenade concerts at fixed hours and music at frequent intervals. All parts are to be named with both botanical and common names. All exhibits to be judged by "points," and judges from a distance preferred. Premiums are to be liberal, but awarded with the greatest care.

Mr. S. T. Wright also has an article in the *Horticultural Times*, (Eng.), on this same subject, in which he advocates that fruit shows should be made a means of education to the public. He says:—

A gardener visiting a Fruit Show may learn a great deal of useful information by entering into conversation

with brother gardeners. He may learn what succeeds and what does not succeed on various soils; the system of growing, and many other items that will prove useful to him. But my object is to suggest an improvement in our Apple and Pear Shows, so as to make them a guide to the public as to what to grow on different soils, and also to inform them on what sort of trees the fruit was grown. I think it might be done by requiring all exhibitors to fill up cards to be provided by the Society in somewhat the following manner:—

Name.....Pott's Seedling.
Season..... ....September toNovember.
Fertility..... Good.
Tree... .....Bush.
Soil.. .....Strong loam.
Aspect . .....West.

By this means a Fruit Show would be very instructive, and of course it would be seen by the exhibit the size and appearance of the fruit, and the different items as to soil, aspect, tree, and fertility, would vary according to circumstances on the card. A very important point for committees to consider is the appointment of judges. No man should be selected unless he is a well known cultivator, of unblemished reputation; and no local man should be chosen. It is far more satisfactory to all concerned to have the judges perfect strangers to the locality. Personally, I should like to see fruit or other useful shows held in every district, as, when conducted in a straight and honorable manner they do an immense amount of good. They encourage a friendly rivalry in the production of fruit, plants, or flowers, which must be to the benefit of gardeners' employes, by the improved quantity and quality of the produce grown in the gardens.

QUESTION DRAWER

Stock for Dwarf Pears.

6. WILL seedlings of the Orange quince do to bud pears on so as to make dwarfs, or must I use the Angers? Please give reason for preferring the latter.

Is the Doyenne Boussock sent out by the F. G. A. a dwarf or standard, and will it do as a dwarf?—E. ROBINSON, Glendale, Ont.

The Angers quince is usually preferred by nurserymen as stock for dwarfing the pear, probably because it is cheaper and more hardy than other varieties. We have, however, had success in using the Orange quince stock, and can see no difficulty in the way of its use for budding with the pear. If any reader of this journal has any other experience to offer we will gladly publish it.

The Doyenne Boussock is best grown as a standard. It may, however, be dwarfed by budding on the quince.

Stock for Russian Cherries.

7. I HAVE a great number of the common Canadian cherry seedlings. Can I use them to bud the Russian cherries on? Will it alter their dwarf habit of growth? If not suitable please state best stock for the purpose. At about what age do the Russians bear fruit? —E. ROBINSON, Glendale, Ont.

We know of no reason why the Russian cherries should not succeed budded on our common Kentish seedlings. Indeed, it is probable that a large number of the Russian cherry trees sold by the nurserymen are so grown. It is best, however, for securing hardy trees to propagate them by sowing the seeds of Russian cherries, or else by budding upon stock so raised.

Norway Spruce from Seed.

8. PLEASE give particulars of raising spruce trees from seed. I wish to raise some for a wind break.—E. ROBINSON, Glendale, Ont.

The raising of Norway spruce trees from seed is a difficult matter, and only experienced persons are likely to have any success. The seeds may germinate freely enough, but when about an inch high, about forming its second leaves, the life of the young plant may be blasted by a breath of unfavorable air, hot sunshine, or an atmosphere either too dry or too humid. The usual practice is to sow the seeds in a well-prepared seed bed which may be shaded when necessary either with evergreen boughs, or with an awning of thin cloth. The soil needs to be light and porous, and the seeds covered lightly and watered frequently. In warm wet weather the seeds will be liable to rot and the bed should be sprinkled with dry sand. Sow either in fall or spring.

Young trees may, however, be purchased from nurseries at so low a price, that we would advise our correspondent to buy them about a foot high. Great care must be taken in handling evergreen trees to keep the roots moist, for if they are exposed for even a short time to the drying effects of wind and sun, there is small chance of their living. The reason of this is that the sap of conifers is of a resinous nature, which drying renders insoluble.

Diseased Grape Wood.

9 FIND enclosed a small portion of diseased bark from one of my Salem vines It first made its appearance last spring; I cut it off and thought nothing more of it, but last fall when I was collecting my grapes, I found that it had spread on the two branches of the vine to the extent of sixteen or eighteen inches. It peels off with the old bark and leaves the wood quite healthy. The vine is otherwise in good condition, and I would like to know what it is.—T NEELAN, Port Hope.

Reply by Prof. Fletcher, Ottawa.

You wrote me a letter in May, enclosing one from Mr. T. Neelan, of Port Hope, enquiring about a diseased grape stem. As all my furniture and instruments were packed up and inaccessible, I sent this on to Prof. Farlow of Harvard University, for his opinion. Prof. Farlow, I may mention, is the highest authority we have in America upon microscopic fungi. His answer is as follows:

"The trouble is not due to a fungus. This peculiar kind of excrescence has in Germany generally been attributed to cold and severe weather in winter. How well that may apply to your case I do not know. The trouble, however, is climatic rather than fungous."

The Baker German Prune

10. YOU would oblige me very much by giving me information about the Baker prune. I want to set out an orchard of prunes, and I see by your journal last summer that the Baker prune is highly spoken of Please give me the name of the person I can buy them from.—GEO. HARRIS, Dungannon, Ont.

So far we believe this variety of the German prune is entirely local in the Collingwood district. Some of our enterprising nurserymen should propagate it and advertise in these columns, as we have numerous enquiries for it.

You might get some information about it by writing to L. Brillinger, Collingwood.

Apios Tuberosa.

11. I WISH for information on the proper treatment of the Apios Tuberosa I cannot succeed with it I have tried three times and always failed. I think my garden is too dry What kind of soil suits it best and how does it attach itself to its support? The climbers have so many different ways of laying hold of the prop, that the same thing will not do for all.—MRS. A BOURN Cobourg

Reply by Anton Simmers, Toronto.

Apios Tuberosa, to succeed well, should be planted in very rich, damp soil near a trellis (as it is intended for covering trellises, arbors and fences); the soil should be well worked and of a loamy nature, not stiff clayey soil. Plant about three close together if you want a good thick covering. This climber does not cling to any trellis work; it requires fastening up like ivy, and will, if growing in good soil, out-grow the ivy easily; besides, its bloom is exquisite and fragrant. It is hardy, not requiring to be lifted during winter. Water it freely if the soil be dry, and success is certain.

Palms.

11. In sowing palms should the seeds be put on their edges or flat?—A. J. Collins, Listowel.

Reply by F. Mitchell, Innerkip.

I have had but little experience in the matter. I know it does not signify in what position seeds of the date palm are placed. They germinate very readily if a sufficient degree of heat is maintained, and for a sufficiently lengthened period.

Rose Cuttings.

12. How would you increase rose bushes from cuttings, when they do not send up suckers?—A. J. Collins, Listowel.

Reply by F. Mitchell, Innerkip.

Wood from the top of the bush and that which is bearing bud or bloom makes the best cuttings. Cuttings should not be made from young suckers, as the wood is pithy and immature.

Budding the Apricot.

13. Can the apricot be grafted or budded on the plum?—Wm. Switzer, Kirkton, Ont.

Yes. You can use either the peach or the plum as stock for budding apricots upon. The peach seedlings are more easily grown, and more easily worked, but the plum stock is hardier, and hence should be used where the peach is tender.

The Crandall Currant.

14. Do you know anything about this new currant—the Crandall Currant. "This new and distinct sort is remarkable for its great size and productiveness. It attains the height of seven or eight feet, forming an enormous bush. Shoots frequently grow five or six feet in one season. The currants are borne in great profusion and are of the size of grapes, jet black in color, and very fine in flavor. Perfectly hardy and a rapid grower. $1.00 each?" You will oblige by answering in the next Horticulturist.—William Switzer, Kirkton, Ont.

We have never seen the fruit, or the bush; and would advise you not to invest much in it until it is better known.

OPEN LETTERS

Blushed Calville.

Sir,—I notice in the January number the following note, by Mr. Charles Gibb:—"Blushed Calville has only borne with me two little specimens in nursery, and did not strike me."

I have spoken very favorably of this variety for western planting, for these reasons: (1) The tree is hardier and freer from blight than Yellow Transcendant or Charlottenthaler. (2) It is an early and continued bearer of handsomely blushed fruit of about the season of the Transparent, that holds its flavor remarkably well when overripe.

After growing many bushels of the fruit at the college and at our trial stations I know of but one fault, which is uneven size of fruit when the trees overbear, ranging in size from that of Transparent to that of small specimens of the Longfield.—J. L. Budd.

Transportation.

SIR,—I am glad to see that our mutual friend Mr. Thom, of the "Beaver Line," has discovered that Montreal Shipping Companies handle our apples better than New York Companies. The information I get to date for this season certainly agrees with Mr. Thom. But this is only as regards this season and I am sure our shippers will be greatly pleased to know that our carrying companies have greatly benefited by the scourging administered last year. There is still some room for improvement and I trust our friends at Montreal, as well as our Canadian Railway Companies, will continue to improve and keep well ahead of the American Railways and the N. Y. Steamship Companies. The Canadian carrying companies certainly deserve the patronage of our shippers for their conduct this past season and if they continue their good behavior we will be inclined to turn all traffic via Montreal. But they must not fall back next season, for we have reason to believe that an attempt will be made next season to draw freights via N, Y. both by extra careful handling as well as lower rates.—A. McD. ALLAN, Goderich.

Plants Tested in Renfrew County.

SIR,—I will try and report on plants, etc. I received from the Fruit Growers Association in 1884, a plant of the PRENTISS GRAPE. I think it is too tender for this part as it gets killed nearly to the ground every winter, with the same care and protection as the other vines. In 1885, I received a yearling plant of FAY'S PROLIFIC currant. It is living and doing well; it had a few bunches of fine large currants on this year. The next I received was a yearling vine of the EARLY VICTOR GRAPE; it is hardy and it is doing well. The next I received was the NIAGARA GRAPE-VINE; it stood the winter well and grew splendidly this summer; then I received a package of spring flowering bulbs; they all lived but none of them flowered.—A STEWART, Stewardville, Ont.

From Quebec.

SIR,—For the benefit of those of us who live to the far north (for fruit raising) I would beg of you when describing fruit trees or plants, specially new ones, to particularly state if they are hardy, or very hardy, and also for grapes if they are early or very early.

If it was not so difficult now for me to write, especially in English, I would have sent you some notes on my small experience here in fruit culture, but I will try by and by

Then if you send out the MOYER grape for trial, I would be thankful to get one and to cultivate it side by side with the Wyoming (very valuable here), and which it seems to resemble much. Having been brought up as a worker in the largest vineyard on Geneva Lake, Switzerland, and having now twelve years experience here with 19 varieties, I hope to be able to give it a fair trial.—L PASCHE, Bryson, P Q

Complimentary to Ontario.

SIR,—Please send me the HORTICULTURIST for 1889, as I have got settled down in my old home, after tasting the fruit from here to Mexico and the Pacific coast and on the prairies and even among the Mormons I have failed entirely to find any place that can produce the kinds and quality that we have at home or that can preserve it in its natural state and flavor as we do. Of course, they have their oranges, but we can buy them as cheap here as there, and their wonderful grapes (to let them tell it), but we have just as fine fruit, as many varieties, of a better flavor, and we can keep them perfect for six months or longer, while they can't keep them at all except as raisins or dried. What they lack in most of their fruit is flavor; it is with a few exceptions, utterly flat. So send along the HORTICULTURIST, for we have got the finest country, the finest homes, the nicest people and the best and largest variety of fruit to be found on the continent, and as Canadians we are bound to keep and improve our goodly heritage.—FREEMAN COOPER, Picton Ont.

Fruit Trees Tested in Russell County.

SIR,—The two RUSSIAN cherry trees I have do not grow very fast, and the one I had last year got killed back considerably. My two HAAS apple trees were almost totally killed with frost and cold, and BAXTER'S RED partly, GRIMES' GOLDEN altogether, and GIDEON either killed with cold or something worse. SCOTT'S WINTER, YELLOW TRANSPARENT, Wallbridge, Peach, MacIntosh, Red, Wealthy and Duchess of Oldenburg, are all right yet. Crops and hay very light here this year, potatoes good.—A. WALKER, Metcalfe, Ont.

The Wire Field-Mice Protector

SIR,—Seeing your notice of the wire field-mice protector, I give you my experience A friend of mine had about ten trees lately nibbled and spoiled, when for three cents per tree they would have been safe. Since I put the protectors around my trees I have seen no trace of nibbles or any other injury; besides they keep away other insects. I have a woolen cloth fastened around my trees about two and a half feet from the ground, plastered over with Stockholm tar, well, every season the cocoons used to be quite thick underneath the ring of woolen rag and

tar, but since I put on the protector there are none. Had I known of the protector sooner I believe I could have saved some fine five-year-old peach trees, which I lost with the borer, for it attacks the tree near the surface of the ground. You say your custom is to bank up all the young trees throughout your orchards with fine earth, after clearing away all rubbish with a good sharp spade. What a cost that must be, and then in spring, I suppose you have to take it away again. Now, I save my trees at three cents each, for the cost of putting the protectors on and off amounts to nothing. My plan is to put a lot of, say one dozen, together, rolled up, and then, opening them out a little, to draw out one at a time, and put it about the tree without tying; and this can be done in about a minute for each tree. I leave them on altogether, sliding it up a little, if I want it away from the surface of the ground. I would not be without mine for a great deal.—Thos. G. Caston, Hamilton, Ont.

Our Fruit Markets.

Hull, England.

The following lines from a letter from Messrs. John Seed & Sons, Hull, may be interesting, as showing the opening which exists for Canadian apples in many towns of England, not so favorably situated as Liverpool:—"Our port has hitherto had very little connection with Canada for apple trade but there is no reason why a good business should not be done here. Of course, we cannot take the large quantities as Liverpool, but our prices are usually a shade higher for everything and direct shippers receive the advantage. Last week, 15,000 barrels came in here. American and Canadian apples, rather depressed the market.

Philadelphia.

Sir,—Below we hand you a summary of the present conditions of our good potato market with current quotations, and to which we invite your careful attention.

Comparatively, our market is in rather light supply. Arrivals are also light. These conditions give our market a favorable outlook, particularly for choice N. Y. White Stars, Burbanks and Hebron, and other northern and western grown choice table varieties. Maine, New Brunswick and other Can. Rose and Ohio Rose are also in scant supply and active demand, being wanted for seed purposes by our southern custom. If you have any choice stock to dispose of, it will be to your interest to consult us about the handling of it at once.

Table Stock, we quote: Choice N. Y. White Stars, 40 cents per bushel, Hebron, 40 to 43 cents per bushel; Burbanks, 40 cents per bushel; strictly fancy, 2 to 3 cents per bushel more; rough stock and other varieties, 35 to 38 cents per bushel, Seed Stock we quote: N. Y. Rose choice, 50 to 52 cents per bushel; Ohio and Pa. choice 52, to 55 cents per bushel; Maine, New Brunswick and Canada choice, 58 to 60 cents per bushel and $1.75 to $1.85 per barrel; Hebron, $1.40 to $150 per barrel and 50 to 53 cents per bushel.

Whenever we can serve you please to order.—Pancoast & Griffiths, Jan. 7th, '89.

London, England.

Sir,—By cable to-day from W. N. White, fruit broker, Covent Garden Market, London, England, we are advised as follows: viz., Market strong, prices advanced, quotations now 11s. to 16s., considerable decrease in supplies, prices will go higher, immediate shipments would meet ready sale.—W. T. Costigan & Co., Montreal.

Liverpool.

Sir,—Arrivals since our last have been greatly reduced and prices show a slight improvement with better tendency, We quote: Baldwins 8s. to 10s. 3d., Greenings 9s. to 9s. 9d., Spies 6s. to 9s., Russets 9s. to 13s., Various 7s. 3d. to 13s. 6d., one parcel of extra fine Kings realized 22s. 6d. A percentage of last arrivals show signs of having been touched by frost. The market with a continuance of light shipments must improve. Awaiting your favors.—Wm. Thomas & Co.

Fruit Imports.

Mr. G. S. Morphy, fruit grower, Grimsby, hands us the following letter from Mr. F. E. Galbraith, Toronto. It is evidently unfair to fruit growers, that, while the policy of protection is followed in the interests of manufacturers it should not also be in the interests of fruit growers. In the line of apples, however, more evil than good would result from an import duty, because our exports far exceed our imports. For instance in 1887, we only imported from the U. S. 36,000 bbls., while we exported to that country over 100,000. Mr. Galbraith writes:

Sir,—As you are, no doubt, already aware there is no protection to the thousands of

fruit growers in Canada, who are not able to compete with the growers of many kinds of fruit in consequence of our climate. For instance, the duty could be left off oranges, lemons, bananas, figs, dates, pineapples and any other Southern fruit and be placed on strawberries, raspberries, cherries, grapes, plums, etc. The prices of fruit would not be altered to the consumer, as he would only be asked to wait for a couple of weeks until our fruit would come into the market, and those who are anxious to have fruit before the season opens can afford to pay the duty. The same trouble is injuring the market gardeners, who are unable to get their early vegetables into market before the market is glutted with American products. In and around this city alone there are hundreds of hard-working market gardeners and fruit growers, who, in consequence of the duty being removed, are hardly able to make ends meet, and when you take into consideration the Niagara district, surely something can be done by the Government to remedy the injustice of not protecting these people as well as others.

Mr. B. Gott, of Arkona, a well-known horticulturist, writes in the same line; he says:—

We have had one year of no duty on fruit. As far as our experience goes it has not been at all profitable or encouraging to us. The movement may be very good on the line of Reciprocity or friendliness to neighbors, but in actual business where we have to buy as well as sell it puts us too much to a disadvantage, or makes us a slaughter market for almost all kinds of fruits long before ours can be got ready for the market, and in some cases long after. This, of course, may be, and is, great sport and a fine thing for the wealthy capitalist and the men who buy, but it is death to the poor, laborious fruitgrower, who should most certainly be the proper object of pity and protection.

In the language of a friend writing me a few days ago on this subject, he says,—"Just now the fruitgrowers are discriminated against. This is manifestly wrong. It is all crow for us and all turkey for the rest of the world. General Commercial Union that would cheapen our supplies might answer better. In early strawberries, apples, cherries, peaches and grapes, our friends in Western New York compete with us to our disadvantage, etc."

It is, therefore, a direct thrust at one of our prominent industries, at the productions of our fruitful soils, and at the revenues derived from the cultivation of these soils.

The Canadian Apple Trade in Britain.

We are in receipt of some valuable correspondence from a correspondent in Walthamstow, England, Mr. Henry Fowler, who writes concerning the enlargement of our apple trade with Britain. He is of the opinion that if some concerted action were entered upon by our Association, and a special agent employed in England, t would result in great advantage to Canadian fruit growers Mr Fowler, however, quite misunderstands the statements on p. 263 of vol xi, that the total shipments from all Atlantic ports were only 114,599 pounds, supposing that was for this whole season, and blames us for an underestimate. If he will observe that selection was dated October 5th, and simply included the quantity to that date, when our crop was only beginning to move forward

The following were the shipments from Atlantic ports for the week ending December 22nd, 1888, and for the season:

Ports.	Montreal.	New York.	Boston.	Portland.
Liverpool	.....	1,382	3,954	13,372
London	.....	400	580	.....
Glasgow	.....	247	3,963	.....
Various	.....	350	.....	.....
Week	.....	2,379	8,497	.....
Previ'usly	.....	331,280	290,398	.....
Season	291,692	333,659	299,895	.....
Last Year	93,134	214,106	83,912	....

Total Shipments to	Week.	Previously.	Season.	Last Year.
Liverpool	18,708	538,510	557,218	236,867
London	980	186,555	187,535	69,137
Glasgow	4,210	224,517	228,727	111,013
Various	350	48,369	48,719	18,275
Total	24,248	997,951	1,023,399	435,292

Our readers will be interested in some selections from Mr. Fowler's letters. Concerning the agent, he says:

"It appears to me that the circumstances of Canada in its fruit growing interests afford at present an excellent opening for a clever, intelligent and active young man to establish himself in London (and he should be a Canadian) as a Canadian agent for the sale of Fruit and Provisions, this last word to signify cheese, butter, lard, ham, bacon, etc

"Such a man as I have referred to, backed and supported by the Fruit Growers' Association, would at once take a position that would command a large portion of the trade in the other commodities which I have summed up as provisions His business would, of course, have to be a wholesale one, but he would not be debarred from selling a single barrel of apples to a consumer All that is necessary to keep such transactions on a proper footing would be an honorable understanding with the trade that his prices in such cases would be such that dealers would have an abatement of ten to fifteen per cent, so that they could sell single barrels

at the same rate. Such an agency as this would soon become well worth the while of the agent, and serve the interests of Canadian shippers by getting the trade into a regular shape, keep down competition, and tend to steady the market prices. He would have to adopt a system of inexpensive advertising so as to ensure it being well known throughout the Kingdom as the legitimate channel through which the commodities he deals in, especially apples, could always be obtained.

"With such an agent in London, well established and doing his work satisfactorily to his principals, it might become expedient to give him the command of the whole British market for Canadian apples, by letting him have his sub-agent at each of the ports of receipt—say, Liverpool, Bristol, Glasgow, and, perhaps, Hull. This would enable him to direct shipments from Canada to all these ports, in the proportions best suited to the demand of the neighborhoods which they could conveniently supply, and so save expense of unnecessary inland carriage. These suggestions may serve as a sort of foundation on which the fruit growers may themselves erect such a structure as may seem to them most desirable."

OUR BOOK TABLE.

Annual Report of the Bureau of Industries of the Province of Ontario, 1887. This useful volume is prepared by Mr. A. Blue, Toronto, and includes statistics of the weather and the crops, live stock and dairy, rents and farm wages, etc. Fruit growers would be much pleased if fuller statistics were given concerning the acreage devoted respectively to the various fruits, as apples, pears, peaches, grapes, etc.

John A. Bruce & Co.'s Thirty-eighth Annual Catalogue of Seeds, 1889, Hamilton, Ont.

Smith & Kerman's annual catalogue of fruit and ornamental trees, grape vines and small fruits, grown at the Dominion Nurseries, St. Catharines, Ont., 1889.

J. A. Wismer's descriptive catalogue of northern grown trees, grape vines, small fruit plants, etc., Port Elgin, Ont.

Vick's Floral Guide, 1889, published by James Vick, Rochester, N.Y. This catalogue is got up in a new and attractive style.

Wm. Rennie's Seed Catalogue for 1889, issued by Wm. Rennie, Toronto, Ont.

F. W. Wilson's illustrated catalogue of Fruit and Ornamental Trees, grown and for sale at Wilson's Nurseries, Chatham, Ont.

John Lewis Child's catalogue of new, rare and beautiful Flowers, 1889, Floral Park, Queen's Co., New York.

The Sorghum Hand Book, published by the Blymyer Iron Works Co., Cincinnati, Ohio.

Night and Day, a record of Christian Philanthropy, edited by T. J. Barnardo, 18 Stepney Causeway, London, Eng.

High Class Fertilizers, manufactured by the Standard Fertilizer and Chemical Co. Works at Smith's Falls. R. J. Brodie, Manager.

First Report of the Directors of the State Forestry Commission of Michigan for the Years 1887 and 1888. This is a most attractively got up volume, well illustrated, and carefully indexed, dealing with succession of forests in Michigan, large trees, new uses for certain kinds of timber, forest fires, cutting and removing logs for lumber, etc., etc.

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PROGRAMME OF WINTER MEETING.

THE combined annual and winter meeting of the Fruit Growers' Association of Ontario will be held at the Court House, in the City of Hamilton, beginning on Tuesday evening, the 19th, and continuing during the 20th and 21st of February, 1889.

A show of choice samples of fruits from each agricultural division is desirable for comparison. New fruits, improved horticultural implements or machinery, plants, flowers, etc., on exhibition, will receive due notice in the report of the Fruit Committee. If sent by express they may be addressed to the care of the Secretary, at Hamilton.

Certificates for reduced railway fares will be mailed to anyone applying for them to the Secretary, at Grimsby.

Questions intended for the *Question Drawer* may be sent in advance to the Secretary, at Grimsby, or handed in at the meeting.

The St. Nicholas Hotel, Hamilton, will furnish accommodation to members of The Fruit Growers' Association of Ontario, at $1.50 per day for single rooms, and $1.25 for double rooms, during the sessions of the Association.

The following is an outline of the programme, with some questions for discussion added to each subject, from which, however, it may be necessary to deviate in some details :

PROGRAMME.

Tuesday, 8 p.m., Welcome address by the Mayor—reply by President ; the President's annual address ; reports ; election of officers.

Wednesday, 10 a.m., VARIETIES OF APPLES THAT MAY BE PROFITABLY GROWN IN THE CENTRAL PORTION OF ONTARIO : *Thos. Beall, Lindsay, Ont.* Discussion of subject. QUESTIONS :—What varieties of apples are most subject to black heart? How can it be prevented?

HORTICULTURAL SPECIALTIES FOR FARMERS : the *Secretary.* Discussion of subject. QUESTIONS :—Is apple growing profitable? Does it pay to export our apples? What are the drawbacks of exportation? TRANSPORTATION OF FRUITS TO HOME AND FOREIGN MARKETS :—What complaints have we to make against the railway express and steamboat companies?

Paper by *D. W. Beadle*, subject, "RUSSIAN APPLES."

MARKETING FRUITS : Is it not time for the F. G. A. of Ontario to take up the question of marketing our fruits? Would it be wise to have a fruit inspector appointed ; or what means could be adopted to induce growers to put up good, straight, honest packages of fruit? Could not the members of this Association act unitedly in marketing fruit through its own agents, instead of dealing with commission men, who often make more than the growers?

2.30 p.m., QUESTION DRAWER.

Paper by *S. P. Morse, Milton*

HOW BEST TO SECURE UNIFORMITY AND FAIRNESS IN THE AWARDS OF PRIZES TO FRUITS AT FAIRS : *Thomas Beall, Lindsay.* Discussion of subject. QUESTIONS :—Is it best to advocate the one judge system in the horticultural department at our Fairs? Should a scale of points be given by the judge in fruits, as is done in the poultry department? What is the best manner

of labeling varieties of fruits for benefit of the public?

FORESTRY: Address by *R. W. Phipps*, Commissioner of Forestry, Toronto.

Paper on Forestry by *I. C. Chapais*, *St. Denis*, *P. Q.*, author of "The Canadian Foresters' Guide." Discussion of subject. QUESTIONS:—What distance apart should walnuts be planted? How many per acre? What is the present value of walnut lumber? Is it true that forests influence rainfall? Is the Ontario Government likely to take any step to preserve our forests in the districts at the head waters of the Muskoka and Ottawa rivers? What kinds of forest trees are most profitable to grow on waste places?

8 p.m., QUESTION DRAWER.

CHRYSANTHEMUM GROWING: *Messrs. Webster Brothers, Hamilton.* Discussion of subject. QUESTIONS:—In growing such plants as Geraniums, Fuchsias, Cinerarias, Primulas, Begonias, Callas, Oxalis, Tulips, Hyacinths, Heliotropes, Coleuses, etc., in house, or in small greenhouse attached to dwellings, what temperature is required, and how much water? Should plants exhibited at fairs be given prizes when shown without labels of variety, both common and technical?

WHAT CAN BE DONE WITH A CITY GARDEN OF, SAY, 20 FEET SQUARE IN PRODUCING SUPPLIES FOR A FAMILY: *Dr. W. C. Adams, Toronto.* Discussion of subject. QUESTIONS:—What is the best way to destroy the cabbage worm (*Pieris rapæ*)? What varieties of tomatoes are least subject to rot?

Addresses by the *Hon. C. Drury, Minister of Agriculture, Rev. R. Burnet, of Milton, Mr. A. Alexander, F.S.Sc., Hamilton.*

Thursday, 10 a.m. Paper by *A. M. Smith, St. Catharines.* Discussion.

MY EXPERIENCE IN A FRUIT GARDEN FOR HOME USE: *T. H. Race*, editor *Mitchell Recorder.* Discussion of subject. QUESTIONS:—What varieties of strawberries, currants, raspberries, blackberries, should be planted for home use?

FERTILIZATION OF PLANTS: *Prof. Panton.* Discussion.

BIRDS USEFUL AND INJURIOUS IN HORTICULTURE: *T. McIlwraith.* QUESTIONS:—Should a law be enacted favoring the extermination of the house sparrow? Should any steps be taken to discourage the slaughter of birds for ornament?

Thursday, 2.30 p.m. GRAPES: VARIETIES TO GROW, SHIPPING, DISTRIBUTING, MARKETING, ETC., by *E. D. Smith, Winona.* Discussion of subject. QUESTIONS: What is the best method of preserving grapes for winter use? What varieties are best for keeping? Should grapes that are grown to an abnormal size by ringing, compete at our fairs with those grown in the ordinary way? In judging fruits at our fairs, should size or quality have the highest value?

PLUMS: VARIETIES FOR HOME USE AND MARKET; INFLUENCE OF THE SCION ON THE GROWTH AND LONGEVITY OF THE TREE, ETC, ETC.: *Geo. Cline, Winona*, Discussion of Subject. THE RELATION OF THE FRUIT GROWERS' ASSOCIATION TO FARMERS' INSTITUTES. QUESTIONS:—Is it wise to advise farmers to engage in fruit culture?

THE

Canadian Horticulturist

VOL. XII. *MARCH*, 1889. No. 3

THE ROSES.

IN distributing among our members the Paul Neyron and the Baron de Bonstetten roses, we hope to be the means of increasing the interest in rose culture. Both of them have been well described by Mr. Fred. Mitchell, on page 16, and we have now pleasure in giving a colored plate of this latter variety, as a frontispiece to this number. It is a splendid rose, large and full, of a rich velvety maroon color, and one of the very best hybrid perpetual roses which an amateur can plant. By selecting some such easily grown varieties at the outset, and finding himself rewarded with a profusion of beautiful flowers, he may be encouraged to try other improved varieties requiring special attention.

To have the best success, it is necessary to have a good rich soil, made by digging in a compost of sods and cow manure. The latter should be about one year old, and mixed in the proportion of one load to eight of the former, and if the soil is inclined to be heavy, add one part to ten of good sharp sand.

Our readers need have little difficulty in propagating roses by layering, if in the month of July they will bend down the branch, and pin it to a shallow trench in the soil, pressing down the earth firmly upon it and leaving the tip growing upward. Care should be taken, however, first to cut a slit on the under side, about an inch long, to the pith. By thus partially breaking the connection with the parent bush, the layered cane will send out rootlets of its own, and when cut away in the fall or spring, will be able to depend upon its own roots for nourishment.

The enemies of the rose are numerous, the chief of which are well and briefly alluded to in the following from *Vick's Monthly*:

The insects most harmful to roses are the green fly, red spider, rose hopper or thrips, and the rose bug and the black slug. Now, though combatting these insects involves some little trouble, yet success will attend all persistent efforts.

The green fly, the thrips and the black slug can all be kept under by syringing the plants with a solution of whale oil soap. One pound of soap is sufficient for eight gallons of water. Throw the water in a fine spray on the

under as well as the upper sides of the leaves. A syringe with a bent nozzle is the best instrument with which to apply the liquid to the lower sides of the leaves.

The red spider can be held in check by syringing the leaves with clear water; in dry times this should be done every day. If the rose bug, *Melolontha subspinosa*, makes its appearance, which is not very often, it can be destroyed by the Insect Exterminator.

PRUNING TREES AND VINES.

DEAR SIR,—I would like to have your opinion on the proper method and time for trimming and pruning fruit trees, shade trees, grape vines, etc. In a great many orchards very little pruning is done. Some people let the trees go without pruning until the limbs become very large, and then cut out large limbs in the centre, leaving the stump sticking out from the trunk—in my opinion, a very good way to start the tree to rot. I have seen trees that it would require a twenty-foot ladder to prune the thick brush off the ends of the limbs, so that the sun could get near the fruit. Is it right to cut out the centre of a tree?

Grape vines are often allowed to run over fences and buildings year after year without pruning, only having bearing wood on the ends many feet from the roots, the buds having been killed out by the steel bug in the spring, or the frost in the winter, as very few lay them down, as they should be in this cold latitude. I have had to cut out vines one half of which were dead and useless wood. I think a few good practical hints to slovenly fruit growers through your journal would do much good. Many here do their pruning in winter, but I prefer to do it when the blossoms are on the fruit trees, when the maple is coming out in leaves; and the grape vines late in the fall, after the leaves are off. Am I right? Trusting that this will not only find space in your journal, but that you will make some comments on it.—W. C. SEARLE, Clinton, Huron Co.

Probably there is no subject upon which more confused notions exist than with regard to the time and manner of pruning trees and vines. Some who pretend to know give such definite advice as, "Prune when your knife is sharp," and others advocate no pruning at all. Some say prune in the winter, some in summer, and others in the fall. In the multiplicity and contrariety of the advice, who wonders that we see so many slovenly kept trees throughout our country?

First, with regard to the TIME of pruning. We have under this head a very old adage, which it is well to remember, viz.: "Prune in winter for wood, in summer for fruit," and probably no better general rule could be given. The philosophy of this is explained by the fact that anything which checks the wood growth of the tree tends to the metamorphosis of leaf buds into fruit buds; and, on the contrary, that which favors wood growth lessens that tendency. Thus, while a tree is young and growing rapidly, it produces no fruit; but when it has attained a certain degree of maturity, and grows less vigorously, it begins to produce fruit. On the same principle it is that a tree that has been girdled will often be overloaded with blossoms, though not yet of the usual bearing age, or limbs which are artificially bent down will yield fruit before the other limbs of the same tree. Now, summer pruning checks the growth

of the tree, and therefore tends to increase its fruitfulness. By it we remove the foliage just when it is in active operation, taking in from the atmosphere carbon, and otherwise transforming the crude sap into a suitable liquid for building up the cellular tissues of the trees. To a limited extent this may be done in safety, but if done too freely the tree will be some time in recovering its strength.

On the other hand, early spring pruning, being done when the tree is dormant, does not affect the vigor of the tree so much, and consequently strong growth results in order to maintain the equilibrium between the roots and the branches.

In favor of the summer time, it is urged that wounds made then heal more readily than when made in winter. This is true, for the growth at that time begins to cover the wounds while they are yet fresh; but perfect healing will also follow the winter pruning, provided the wound is properly protected from the air by paint or varnish.

To a limited extent, then, summer pruning is advisable, especially where trees are growing thriftily, and need a check to induce fruitfulness; and the proper time for it is when the first growth is completed, and the terminal bud formed, for by that time the cambium is sufficiently matured to perform nature's cure of the wounded portions. Generally speaking, this period is from the middle of June until the middle of July.

Winter pruning is generally adopted because it is the season of the greatest leisure, and the naked limbs enable the operator to judge best which should be removed; but the term is misleading, for it must never be done when the wood is frozen,

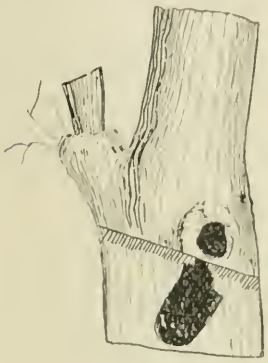


Fig. 13.

and hence either the fall, the early spring, or only the mild days of winter, are at all suitable.

Another caution must here be

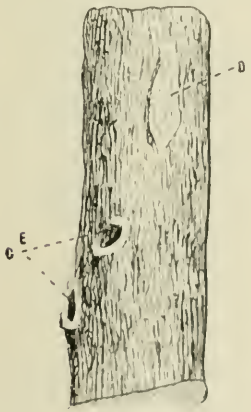


Fig. 14.

given, and that is, never to prune in spring after the buds begin to swell and the first growth is pushing, for the sap, being active and not yet sufficiently matured for healing the cut, will leak, and this so-called

"bleeding" will continue perhaps for a long time.

So much concerning the time of pruning; now concerning the MANNER. No; we wholly condemn the common custom of neglecting to prune until the limbs are very large, or cutting them out in such a way as to leave a stump sticking out from the trunk. We copy from the *American Garden* an illustration, figure 13, showing the evil effects of such faulty pruning, where the dead stubs are gradually introducing decay into the heart of the tree, soon to cause a hollow trunk, and early death; and figure 14, where at *d* a limb has been lopped off closely, and so healed that the scar is scarcely observable; while at *e* some have been removed in such a way as to leave open basins almost beyond the power of nature to heal. Large limbs should never be removed, if possible to avoid it, but, if necessary, they should immediately be covered with some preparation which will exclude the air. For this purpose various preparations have been recommended, as a coating of thick paint, or of coal tar of such a consistency that it may be applied with a brush. Mr. Downing recommends the following composition viz.: Take a quart of alcohol and dissolve in it as much green shellac as will make a liquid of the consistency of paint. Apply with brush. Keep it in a well corked bottle, sufficiently wide mouthed to admit the brush, and it will always be ready for use.

Neither do we believe in removing the large limbs in the centre of the tree to let in the sunlight. The right and the wrong ideal of the form the pruner should have in mind when at his work are well shown in figures 15 and 16, in the first of which the limbs have been removed according to the reckless butchery so

FIG. 15.

often performed upon our helpless apple orchards, and which is one cause of the decrepit, half-dead appearance such orchards usually present.

The second represents a tree which has been allowed to grow according

FIG. 16.

to its natural inclination, and the pruning has been simply an annual thinning of such small branches as threaten to cross others, or thicken the head too closely, and in this way the removal of large limbs is altogether avoided. Such a tree will live in health and vigor to almost twice the age of the former. The

pruner should study the natural growth of the tree and prune to favor that; thus the Spy and the Rambo

Fig. 17.—Vine One Year Transplanted.

are upright growers, and with them one leading branch should be encouraged in the centre, and side branches at suitable intervals. The Greening and the Roxbury Russet have spreading heads, and hence should have several main branches so trained as not to interfere with each other.

But of all barbarisms, that of cutting out the leading branches in the centre of a tree, should be avoided, for numerous sprouts will spring up, decay will ensue from the large wound, and, worse than all, the tree will in time be apt to split apart when heavily laden with fruit.

PRUNING THE VINE.

In the home garden, where the vine is needed to cover a verandah, an arbor, or to screen the sides of an old building, the shears may be sparingly used; but in the commercial vineyard it is almost impossible to succeed without them, because by intelligent pruning far more fruit is produced to the acre, and that both

Fig. 18.—Vine Two Years Transplanted.

earlier in ripening and of a better quality.

The most pleasant time for this work is in the fall, after the fall of the leaf, or in mild days in winter; but many growers wait until March, a month of chilly winds and muddy

ground, when it is anything but pleasant.

Methods of pruning the vine have been so often given and illustrated in these pages that we hesitate to touch upon them so soon again.

Fig. 19.—Vine in the Spring of Third Year with Arms Extended.

While the Fan System, referred to in vol. x., page 76, from its simplicity, is very commonly employed in Canada, we commend to the tidy gardener the *Renewal System* of the English vineyardist, or some modification of it as shown by the accompanying illustrations, which almost explain themselves. We may remark, however, that the cutting back at the end of the first year should be at about the height of the first wire of the trellis, and this in cold sections should be quite low for easy protection.

Light temporary stakes will be enough for the first two years, but in the spring of the third year the posts will need to be set. They should stand six feet above the ground and be placed twenty-five feet apart, and be well braced. No. 16 wire, running about 100 feet to the pound, will answer, and three or four strands will be sufficient.

According to figure No. 20, all the upright branches are about a foot apart, and are annually cut down to within two or three buds of the main laterals;* but English gardeners annually cut back every alternate cane and leave the others to bear fruit on the small lateral branches which will grow from them. Some Canadians, who practise this system, ring each bearing upright either by removing a ring of the outer bark, or by twisting a wire tightly around it near the place where it is to be cut off at the next pruning. The sap, being thus prevented from descending beyond a certain point, goes to enlarge to an abnormal degree the fruit of the

Fig. 20.—Three Year Old Vine in Fruit.

* This is known as the Fuller system.

ringed branch; it is claimed, however, by many that this is done at the expense of quality. Others, again, say that the slight difference in quality is far more than counter-balanced by the early maturity and increased size of the fruit, as is instanced in another column.

The most convenient tool for grape pruning is a pair of French Vine Pruners, such as is shown in figure 21, and with this a great many vines may be operated upon in a day.

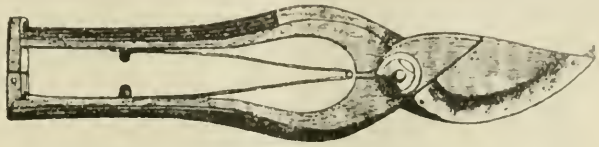


Fig. 21.—French Vine Pruners.

A FEW HINTS ON LANDSCAPE GARDENING.

SIR,—I have a place with a frontage of 198 and two sides of 160 feet each. I know very little about ornamental trees and am desirous of planting the three sides with ornamental trees and a hedge.

What trees would you recommend? I thought of Mountain Ash, including Oak Leaved Horsechestnut white and red flowering, Acacia or Honey Locust, Walnut, Flowering Thorns, Maple and Basswood. I can get these. I would also want some evergreens, different kinds.

How would a thorn hedge do? Some agents recommend a thorn hedge. I forget the name. They say it grows very quickly. I also require a large number of fruit trees, and small fruits for back lot. Would like if you would send me a list of reliable nurserymen. I do not wish to order through agents.

I like your journal very much and get a great deal of information from it although I would like to see more about ornamental trees and flowering plants treated in it. An early answer will oblige very much.—A. B. Klein, Walkerton.

A very artistic plan for laying out a small lot was recently given in the *Country Gentleman*, which we reproduce here as being one which might be helpful to our correspondent. The frontage is about the same as his, but the depth is about 400 feet, thus taking in the kitchen and fruit garden, and altogether enclosing an area of about two acres in extent. The useful and the ornamental are so artfully blended that one might suppose the whole to be ornamental, for the garden is concealed from the carriage drive, which surrounds it, by hedgerows of tall growing shrubs such as Tartarian Honeysuckles, Lilacs, Spireas, Purple Fringe, etc., etc.

There are two driveways, one of which curves gracefully past the house and the other forms a partly concealed side entrance to the barn and garden, for conveying fodder, grain or manure. The grounds in front are chiefly devoted to a smooth lawn, except as occupied with trees or beds of flowers and shrubbery, while the whole boundary through which the carriage way is laid out in the rear, is gracefully planted with groups of ornamental trees and shrubs.

The whole is so planned as to be managed economically; one day sufficing a man to cut the front lawn with the lawn mower, one to put the flower beds in order, and one to cultivate the kitchen garden with the horse and finish with hoe and rake.

For the planting of the side and rear of such a lot as this, we have a large list of deciduous trees that are hardy enough for the latitude of

Walkerton, and we mention the following varieties from which our correspondent will be safe in selecting, *viz* :—Wier's cut-leaved, Silver, Red and Norway Maples; American and Cork Elms; European Silver Basswood; Swamp White, Scarlet Box-elder, European Larch and Walnut.

Among the coniferous Evergreens, we may mention, as hardy and very desirable in grouping: —Norway, White and Hemlock Spruces; Nordman's Fir; Red Cedars; Scotch

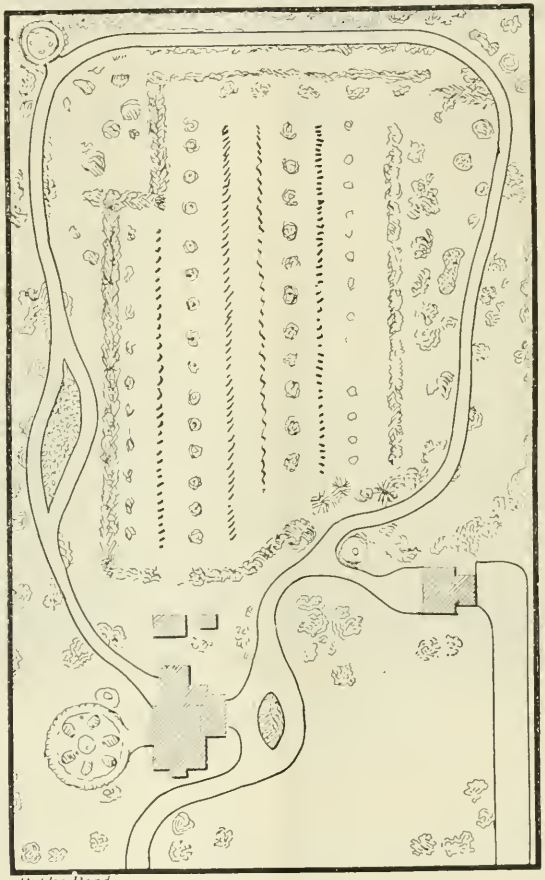


FIG. 22.

and Red Oaks; single and double flowering Horsechestnuts; Showy Catalpa (*C. speciosa*); cut-leaved and American White Birches; White and Honey Locusts; Buttonwood (*Platanus occidentalis*); Wisconsin weeping Willow (to be used very sparingly, and preferably near water, see fig. 23); Wild Black Cherry, Austrian, White and Cembrian Pines, of which the latter is particularly adapted to small grounds.

For planting in prominent positions about the front lawn, or as single specimens, we may suggest the cut-leaved Weeping Birch, the Scarlet Oak, the European and the Oak-leaved Mountain Ash, the Purple

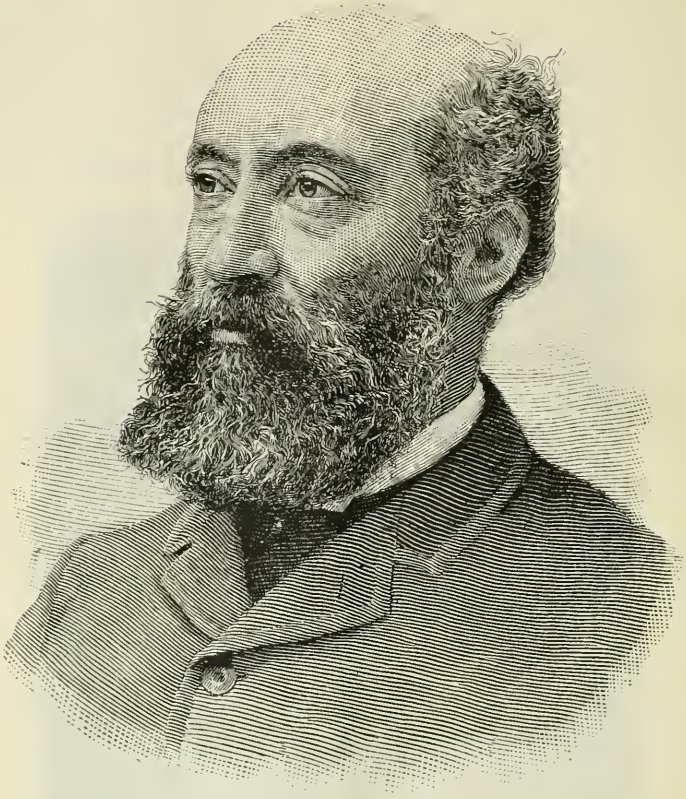
Leaved Beech and the Ginko (or Maiden Hair tree.)

With regard to the enquiry about hedges we would not recommend the Buckthorn, on account of the expense of keeping it properly pruned; indeed unless needed to turn cattle, we see little use of thorn hedges of any kind. But, if a thorn hedge must be had, the Honey Locust is about the best for Canada, although it, too, is a very rampant grower. It should be planted in double rows about nine inches apart.

As a hedge simply for an ornamental boundary, we know of nothing more suitable than the American Arbor Vitae, often miscalled the White Cedar. It is a slow grower and thickens up gracefully under the shears. It should be set while the plants are quite small, at from ten to twelve inches apart. Of deciduous shrubs the Privet, Barberry, Japan Quince and Spiraea Van Houtii are all very desirable. The first is easily grown, even in the shade of trees, bears the shears remarkably well, and, pruned in a conical shape from the ground upward, forms a beautiful hedge, holding its foliage far into the winter. Nor is the pruning difficult, for the young shoots are slender and easily cut with the hedge shears.

Fig. 23.—Weeping Willow.

Regarding reliable Nurserymen from which the above, and other stock may be purchased, we would refer our correspondent to our advertising columns.



MR. ALEXANDER McD. ALLAN,

PRESIDENT OF THE F.G.A. OF ONT.

IN volume xi., page 4, of this journal, there appeared a brief biographical sketch of this gentleman, together with an outline engraving of his face. The latter, however, failed to portray his features with any degree of correctness, and therefore we have had a new and much more expensive engraving prepared, both for these pages, and as a frontispiece to the Annual Report for 1888. The Report, which was sent on to the Government printers early last December, will soon be ready for distribution, and contains, besides, three beautiful, full page engravings of beds and bedding plants, as arranged on the Government Grounds, Ottawa, by Mr. N. Robertson.

THE APPLE MAGGOT.

By L. F. Abbott, Lewiston, Maine, U.S.A

IN the January number of the Horticulturist, in your remarks upon the *Trypeta Pomonella*, you speak of allowing sheep and hogs the run of the orchard to help destroy this pest; and also say that the worms leave the apple and burrow in the ground before passing to the proper stage. My observations regarding this insect have led me to think that but very few apples fall from the trees as a result of the presence of the apple maggots. We find both insects, the Codling Worm and the maggot, infesting the same specimens of fruit. As a result of the presence of the former, many apples come to the ground, and hence your advice, to give the sheep and hogs—particularly the former—the run of the orchard as late as practicable before harvesting the apples, is always in order, for, doubtless, many of both species of insects would be destroyed, though it is pretty well established that a majority of the Codling Worms leave the apples before they fall. But I believe the chances are, that larger numbers of the Trypetas than of the Codling Worm would be destroyed by the animals, from the circumstances, which my observations have shown to be the fact, that a part, at least, of these maggots pupate in their burrows within the apples they infest. I have several times had specimens thus change in confinement, usually about one half remaining within the apple, the remainder crawling out and into a corner of the box in which they were confined.

Frequently I have found specimens of the maggot in pupa form in apples in winter when brought from the cellar. All of which goes to show that, like the Codling Worms, many leave the apple to pupate, and a portion remain in the fruit later—perhaps a later crop of worms.

I am in hopes the use of arsenical insecticides upon our orchards is going to be the means of staying the progress of the Trypeta as well as of the Codling Worms. Very few of our Maine orchardists have the courage to spray their trees with London purple or Paris green, but a few, like Mr. Pape, President of the Maine Pomological Society, and a ew other prominent and progressive orchardists, have done so, and with the best results. If spared till another season, I propose to experiment in this line and carefully note results.

Mr. P. M. Augur, of Connecticut, stated, at the Winter meeting of our State Pomological Society, that in the season of 1887, orchards sprayed with Paris green for the Codling Worms were remarkably free from the ravages of the Trypeta. May we not hope that this will prove the sovereign remedy for both these pests of the orchard.

THE FARMER'S GARDEN.

A Paper Read before the Stormont Farmers' Institute by Mr. John Croil, Director for Division No. 1.

I MAKE no apology for being on your platform to-day other than to say I am asked, as a director of the Fruit Growers' Association of Ontario, to make a few remarks on gardening as connected with farming. We think they should go hand-in-hand. A good farmer is a poor gardener, so it is often said, but why should it be so? The thorough farmer is, of all others, the best qualified to be the best gardener. One reason for this idea is, we think, the belief that there is no money in the pursuit. Cheaper, you say, to buy vegetables than to raise them. But do you buy them? The farmer's table, as a rule, isn't half as well supplied with vegetables as the town man's. We don't advocate, in all cases, a large garden. The size of it will be best regulated by the facilities you have of disposing of the surplus after the wants of your family have been supplied. Let it be situated convenient to the dwelling. Your wives and daughters will, in all likelihood, have more to do with it than you. Don't tell them you will plough or dig it for them

AS SOON AS ALL YOUR CROP IS IN.

Your wives should make the house too hot for their liege lords till you get this done. If possible, let there be no trees to shade your garden. Plant seeds of the best kinds and of the best quality you can find as soon as the ground is in good working order, and not sooner. Don't wait for the moon; I think this is an old-fashioned idea. "He that observeth the wind shall not sow." I think the same may be said of the moon. It is economy to use the best known kind of seeds at any reasonable price. Last spring I had some of Burpee's New Express Cabbage; it matured about the time some were thinking of planting, and sold readily for eight cents a head, not large ones either; while large heads of the late kinds were sold freely at from two to three cents a head.

FIGHT THE WEEDS.

You are sure to have them; kill them in infancy. If you have not learned the truth of the Bible words, "Thorns also and thistles shall it bring forth to you," you will before the season is far advanced. Supply yourself with the best tools. None better that I know of for keeping down the weeds than the Dutch or flat hoe. Use it as soon as you can see the seed rows, and use it often. A lively man will go over a good-sized garden with it in a day. A wheel cultivator works well in mellow soil. I prefer the hoe in stiffer soil. Sowing in beds, I think an old-fashioned system and a waste of time. Run your line the length of the garden with the assistance of a smart boy—better if the man is smart too; you will be surprised how much ground you will plant in a day.

GIVE YOUR GARDEN ACRE EQUAL CARE,

and I think it will pay you as well, or better than any of the others. I claim to be one of yourselves, having for the last forty years employed all my time in your profession, and gardening as well. We are often advised to profit by our failures as well as our successes. I have had a goodly share of the former, and hope I in some measure learned wisdom from them. Let me give you a few figures from my own experience. This last year my garden occupied a space of measured ground 2,478 square yards, a little over half an acre. Besides having a bountiful supply for household use, I sold off this:

Cabbage to the amount of	$40 00
Onions	25 00
Celery	7 00
Carrots, turnips, beets, tomatoes, etc	5 00
Grapes	10 00
	$87,00

This, I considered, about an average crop. The ground, moderately manured, was in good condition, and kept as clean as the excessively wet season would allow. You can no more expect to get a heavy crop of vegetables than of wheat unless you

GIVE THE GROUND FAIR PLAY.

The above results, I think, you will admit are better than you would expect from wheat, even supposing you had forty bushels to the acre. A friend of mine, however, in Cornwall did better than this. I measured his ground, 1,310 square yards, a trifle over a quarter of an acre. Off this he sold:

Vegetables	$53 06
Strawberries	28 38
Currants and gooseberries	13 47
Grapes and apples	3 23
Tomatoes	6 86
	$105 00

Besides being a better gardener than I, he had the advantage of a ready town market. Working in the woolen factory from 6 a.m. to 6 p.m., all the time he had for the garden was before or after these hours. All his hired help for the garden didn't amount to more than $10. I call this profitable gardening. Besides the vegetable garden, I had, in strawberries, 1,488 square yards, about five-sixteenth of an acre. These were in rows four feet apart. Off this piece I sold to the amount of $100, which I considered above the average crop, and having sold all the fruit in a home market, saving all the expense of boxes, crates, freight and commission, I did better than if I had been obliged to ship them. We often read of $500 to $700 or $800 from an acre of strawberries, but I would advise you to receive all such reports with caution. No doubt it has been done, but don't you expect such a crop. Some of you who may know more about strawberry-growing than I do may say, that crop of strawberries cost you a whole season's work, the year before yielding you no crop. True, but this year's was the third crop on the same ground, so you must divide the extra year's labor among the four crops. Again you say, you had any amount of

HOEING AND WEEDING.

Yes, we had; and sore backs, too, picking; but tell me, what do we get that's good without labor? And, as a rule, the better it is the more labor it costs us. Besides the pecuniary gain, isn't there pleasure and profit of another kind in having your fruits and vegetables fresh from the garden? A happy contrast to those that have wilted in the market waiting for a purchaser. We often hear our town friends say: these are not like the strawberries we get in the city; and we believe them.

A WORD ABOUT THE ORCHARD.

You want that, too, not necessarily a large one. A few trees are indispensable for your family; an acre or two out of your hundred will, I think, be a safe investment for most of you. My first orchard was planted forty years ago. I may say I have been re-planting ever since. I have been complimented on having the thriftiest looking orchard in our neighborhood. The trees grew well, with every appearance of healthiness, but I have had lots of failures. My first and greatest mistake was planting trees unsuitable to our climate. The nursery catalogues told me they were hardy, but they were not enough so for our cold north. The kinds we can successfully grow here, so far as I know, are comparatively few; but it's only a few good kinds we need. Its a mistake to have

TOO MANY KINDS.

Get a few selected trees of undoubtedly hardy varieties, mainly of such kinds as you find thriving in your neighborhood, and no more than you make up your mind to attend to. Prune early and regularly, and so avoid the necessity of ever cutting off large limbs. Don't avail yourself of the assistance of the cows in the operation; they will do it unmercifully. Fence them out, and the hens out of your garden. Prepare the ground, as for a good crop of corn, set your trees thirty to forty feet apart, and cultivate as long as the trees will allow you. Let your aim be in the orchard to raise

APPLES AND NOTHING ELSE.

Other crops among your trees will be at their expense. The greatest drawback to our orchards has been the black spot. It has troubled longer than many suppose. In a report of the fruit growers of the County of Lincoln, dated 1869, we have the following: "The black spot, as it is called, has been worse than ever known before." And the report goes on to name the varieties most affected. So it appears the disease has been going on and increasing for some years previous to 1869, without either its cause or a cure being discovered. Suddenly as it came, in the season of 1887, it left us, as we hope, for good. During these years, such orchards as had a large proportion of Fameuse and other kinds most liable to the disease, were almost worthless. Mine, about six acres, mostly Fameuse, didn't pay the expense of gathering—a lesson not to have

TOO MANY EGGS IN ONE BASKET,

which, when I learned, induced me to go into strawberries, of which I have one-and-a-half acres to crop next year. This year we hand-pulled 500 barrels of apples, and sold them mostly at $2 per barrel—a fair price, considering the immense crop. But new barrels—and it won't pay to ship them in any other—cost me 32 cents, and freight about 27 cents, reducing the net price to about $1.40. Besides these I had about 200 barrels fallen apples, which netted me 75 cents per barrel. That gives the returns from six acres:

500 barrels, at $1.40	$700 00
200 " " 75 cents	150 00
	$850 00

When I see, as I often do, farmers driving out from our back country, depositing our carefully hand-picked apples in bags, and transporting them over roads the roughest, and distances from twenty to thirty miles, I fancy their load reaches their homes in a condition fit only for the cider press, without the trouble of further grinding, certainly not for the desert, and if I could reach their ears to-day I would say, plant an orchard. E. L. Wakeman, in a letter to the Cincinnati *Times*, during a trip through Nova Scotia, says: "When traveling through the valleys (Annapolis and Gaspereau) an interesting reflection came to me, and I wondered whether it might be so to others. That was, that wherever apples grow a kindly, sturdy and progressive people are ever to be found. Think it over, and the idea grows upon one. Great houses, greater barns, fine stock, ample competence, large provision for all seasons and needs, sturdy ways, sensible thrift, genial neighborings, and all that dear procession of country-side life that has vigor and cheer, with Autumn's noble housings and stores and winter's large and generous delights, marshall the thought in memory's bravest trappings." Before closing, allow me to remind you of the advantage you may turn these long winter evenings to by storing your minds from the book-shelf. Many, even of the priceless catalogues of the day, afford useful information to the gardener. The

monthly magazine of our Fruit Growers' Association has a good man at the wheel and a staff of able contributors. For the small sum of $1 a year, which enlists you as a member of the Association, you will, at the end of the year, be in possession of a handsome volume, brimful of valuable information in all matters pertaining to the garden and orchard; besides, you will receive a copy of the annual report, which contains a careful verbatim report of the discussions on fruit culture which took place at the various meetings of the year, and a selection from a large list of plants, etc., to be distributed in the spring.

FRUIT RAISING IN NORTH HASTINGS.

Hardy Apples—Protection from Mice.

THE scions of *Vladimir Cherry* were received in good order, and I grafted them on the wild red cherry. They grew too vigorously, I thought, and seemed tender in the fall; the frost cut them. I cannot say how they would have stood the winter, as the mice girdled them all. I should like to try them again; I think they would grow slower on the Choke Cherry. I have one early Richmond which grows well and does not kill back. It has not fruited yet, though three years planted.

The *Dewberry* is too tender here.

The *Jessie* strawberry is growing vigorously. I will report on the fruit next season.

Grapes grow well, but have not fruited yet.

Gooseberries a complete failure, except the wild sorts. The Houghton, Smiths Improved and Industry, all mildew to kill; they will bear fruit for one or two seasons. I tried salt, it helped them some; will try it heavier next year.

Apples.—The *Duchess of Oldenburgh* heads the list for productiveness and hardiness, the young trees will kill frequently, I think from the frost and the sun in early spring, but after three years planting they do not kill, as they ripen their young wood sooner and better before winter.

The *Peach Apple* is perfectly hardy and a very vigorous grower.

The *Mackintosh Red* is quite hardy, but is very subject to a black fungi on the bark. I use lime and wood ashes as a wash, which I find effective.

The *Wealthy* like the Duchess, is a valuable tree here, but kills easily when young. In speaking of the young trees killing, I have reference to the imported stock from Toronto and Rochester. I find that the same varieties budded on seedlings raised here do not kill. I also see that the hardiest and best producers have very short trunks, and have generally died down when planted to about twelve inches of the ground. I raise all my young stock with short stems. I never prune at all, that is, never use the knife. I rub off some buds on young trees. I am certain that the pruning knife is sure death to any tree, sooner or later, even a forest tree.

Our soil is a rich, yellow, sandy loam. An orchard, to succeed, must

be planted on an eastern or north-east slope, and must be, in any case, where the summer frosts will not kill potatoes. In low places, subject to frost, the young wood on the trees is killed before the winter sets in, or has not ripened sufficiently to stand. The cheapest and best protection for young trees against mice I find is tar paper. About fifteen inches is quite high enough up the stem for the paper to come. Open your roll of paper which is wide enough to cut in two for the height, cut off about twelve inches, and you have enough for two trees, roll up to about three inches in diameter, so as to give plenty of room for air round the tree, tie on with a string, put a little soil round the bottom to prevent the mice getting under. I did not lose a single tree last year, while the year previous I lost thirty-five girdled, although they were carefully banked up with earth and the snow tramped. I did not tramp the snow around the papered trees and they were safe, concluding to let them go if the paper would not save them, after all the fruitless labor of the year previous.

I should very much like to test the Moyer grape here if you can spare one.—A MEMBER OF THE F.G.A., OF ONT.

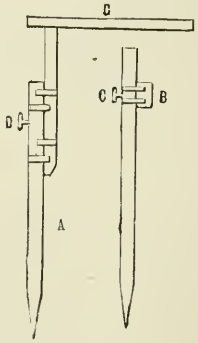
GRADING FOR DRAINS.

CAREFULLY laid drains are important to success in fruit culture. The apple tree may grow on wet soil, but is much more liable to injury by cold in such a situation, and often protracts an enfeebled existence. The Quince, though a lover of water, yet soon succumbs to the effects of the cold in undrained soil; and almost all our small fruit plants are rendered sickly and unfruitful if placed on wet soil and draining neglected.

Besides this, under-draining is a means of direct benefit to growing plants, for the rain water, instead of overflowing the surface, is drawn through the soil, carrying with it the growth elements with which it is laden, such as nitrogen, carbonic acid, etc.

In this connection some of our readers may be interested in the following simple method of grading for drains, from the *Drainage and Farm Journal:*

I use two targets, which I will name No. 1 and No. 2, to describe



NO. 1. NO. 2.

FIG. 24.—GRADING FOR DRAIN LAYING.

them, and a pole. No. 1 A, is a piece 2½ inches square by two feet long pointed so as to drive in the ground, two clasps on as shown in cut, for B to slide in. B, one by two and one half inches, by two feet long.

G, one by two inches, eight inches long, fastened on A with thumb screw D. No. 2 is a piece one by two inches, six feet long. B, block two inches square made to slide up or down as is necessary—fastened with thumb screw C. Dig ditch deep as desirable at outlet. Set No. 1 so that arm G extends over ditch. Then take a pole and set up in ditch and slide B down or up on No. 1 till it comes even with top of pole. Next take No. 2 and stick it into the ground several rods *back* in the opposite direction that the ditch is to run from No. 1, in line with ditch. Now take pole and go ahead about six rods on the line of the ditch, and sight from three feet on pole back over No. 1 to No. 2 beyond, and slide B on No. 2 up or down as is required till you have it in range. Commence to dig at No. 1, and set pole in the ditch every foot or two to see whether the top of pole comes in range with target on No. 1 and No. 2; when you have dug back to where the pole was sighted from, proceed as before. No. 1 can be leveled with pocket level if ground is laid off by a civil engineer. Set targets with grade stakes. There are a great many tile laid uneven in grade, which soon fills with mud, the users get discouraged and blame the tile, saying it don't pay.

SUCCESS WITH SMALL FRUITS.

By E. Morden, Niagara Falls South, Ont.

PROFITABLE results from small fruit culture depend upon several conditions:

1. *A soil naturally good.* To make a good soil of a very poor sand or a hard clay is, perhaps, possible, but it is rarely profitable. No one soil suits all fruits. Many fruits can only be grown with profit upon soils specially adapted to them. A good dry, sandy loam will grow many of them. A clay loam will grow others to better advantage.

2. *A manure supply within convenient reach.*

3. *Nearness to a good shipping station.*

4. *Nearness to a local market.* Sometimes the local market will take the crop and make shipments of fruit unnecessary. Sometimes all the fruit may be profitably shipped. Commonly we need both methods.

5. *A selection of the best market varieties.* This is of vital importance. The beginner who relies upon catalogues will probably buy very expensive and mostly worthless varieties. Visit the grounds of experienced market growers and see what they are planting this year. No other plan compares with this for safety.

In the absence of such opportunity write to or talk to an honest market grower, who does not make secrets of his knowledge. Buy your plants directly from reliable parties.

6. *Some knowledge of practical field work, and of the necessary business management.* City men seldom succeed. A good practical farmer with study may succeed.

7. *The right kind of a man.* In addition to practical knowledge of field work and business methods he must have persistent pluck to fight the weeds for seven months in the year for a series of years. He must

do the things that ought to be done. He must have nerve to dig out as well as to plant. Raspberries, gooseberries and currants should be grown on plants of a less age than ten years.

A FAMOUS APPLE TREE.

THE *Western Chronicle*, Kentville, N. S., is responsible for the truth of the following extract:—

There is a famous apple tree on a farm in Lakeville, Cornwallis, Kings County, Nova Scotia, owned by Mr. Joseph A. Kinsman, and purchased by him in 1878 from the heirs of the late Lawson Rackwell, Esq. For the benefit of those wishing to know the facts concerning the productive powers of this famous tree, we give its record for the six bearing years that have elapsed since it came into the possession of its present owner, for which facts we are indebted to that gentleman:

In 1878 it produced		15	barrels.
1880	"	18	"
1882	"	21	"
1884	"	20	"
1886	"	21	"
1888	"	23	"

being 118 barrels of merchantable fruit produced in the six years. In addition to this it has produced during these same years 20 barrels of apples which, owing to bruises, etc. (the tree being a difficult one to pick) were unfit for market. The most of these apples would be among the largest and finest which the tree bears, and should in justice be taken into account in giving statistics of its productiveness."

It would have been interesting had we been told the variety of apple tree giving such a famous yield; and also its age and the kind of soil upon which it is growing. We are not prepared, without these particulars, to yield the palm, in apple culture, to our Nova Scotian friends.

On the Woolverton Homestead, at Grimsby, Ont., there is a Greening apple tree, nearly one hundred years old, the branches of which cover an area of about forty feet in diameter, and which has frequently yielded from seventeen to twenty barrels of marketable fruit, in addition to large waste from falling. The soil is a deep, rich, sandy loam, situated at the base of "the mountain."

No doubt, however, that the Annapolis and Gaspereau valleys of Nova Scotia, are especially adapted for apple culture. They contain about 600 square miles of arable land, of which about one-tenth, about 40,000 acres, is planted with apples, and about 500,000 barrels of Gravenstein, King, Baldwin, etc., are exported annually; and these are chiefly grown upon young trees not yet of bearing age.

FLOWERS

THE ORCHID HOUSES OF W. S. KIMBALL.

By Fred. Mitchell, Innerkip, Ont.

THERE is much in the pleasant city of Rochester which is of special interest to the flower-lover. But there is in it no other place, perhaps, in which there is so much of interest, or in which so much of interest or in which so much can quickly be learned of the rare and beautiful in floral nature as at the private conservatories of W. S. Kimball.

When in Rochester the past summer I spent several hours in these conservatories, and although I could not, in so short a time, systematically take in the whole round of this great private establishment, yet I saw enough to give me an idea of the value and magnificence of the collection. Knowledge regarding the treatment of orchids is limited to as yet but few in Ontario. I do not know where the knowledge of the varied treatment of this great family (according to the requirements of each member of it) can be more quickly obtained than at these conservatories. Anyone premeditating the commencement of the pleasant, but often uncertain pursuit of orchid culture, would also do well to visit these houses in order to make a wise selection of varieties.

There are, I think, at least seven houses devoted to orchids alone. Many of the varieties which I saw were so costly as to be beyond the reach of those of ordinary means. There were Cypripediums in three-inch pots, which had cost two or three hundred dollars each; and epiphytal orchids on billets, or in baskets, which had cost fabulous sums, one (a vanda) which I was informed cost fifteen hundred dollars and was considered to be worth, at the time I saw it, at least two thousand. It is rarity, however, and not extraordinary beauty, which makes certain varieties so high priced. Some of the varieties of Cattleyas (which to me were among the most beautiful of all) are within the reach of everyone.

The Cattleya, in its variety, was to my mind, the grandest orchid of all. Most of the varieties bear immense bloom, beautifully tinted and deliciously fragrant. Cattleyas are not so difficult to manage as some less beautiful orchids. Some orchids are wonderfully prolific of bloom. I saw a Cattleya and also a Coelogyne which, each, at one time, bore five hundred flowers on a single plant. I was told that the Lycaste is one of the easiest managed of all orchids and therefore specially valuable for beginners in orchid culture. It is, however, *not* quite so beautiful as some others. It is a matter of interesting study to behold these epiphytal orchids, strong in growth and rich in bloom, and yet with no

power of deriving nourishment but such as they receive from the air. The butterfly orchid, the bee orchid, the man orchid, the wonderful Esprite de Sante, or flower of the Holy Ghost, and many others, equally wonderful, can all be seen here, and seen in the greatest perfection and beauty. Besides the orchid houses, there are two rose houses, a house for violets and other plants of a like nature. There is also a house which contains a general collection of tropical plants. Here may be seen the Devil Plant and a host of other rarities. I never saw elsewhere Anthuriums so full of bloom as I saw them here at the time of my visit. As we ordinarily meet with it this plant is not generous in its gift of bloom.

Besides all these there is an aquatic house. An artificial pond covers the inner area of the house, with the exception of a walk which extends around the whole circumference of it. In this miniature lake are gathered aquatic plant wonders of many climes. There are magnificent blue water-lilies from Zanzibar, the Victoria Regia from the tropic lagoons of the Amazon, the leaves of which, when fully grown, will support a boy as on a raft; the bulrush of Egypt, from which was made the Papyrus on which the ancient records of the country were written and preserved, and of which also was formed the protecting ark of the infant who was later the great law-giver and leader of the people; the Lotus of the Nile, with its famed, accredited power of dispelling care, and of producing in its stead forgetful, sensuous happiness. These, with many others of like rarity, or association, or beauty, make this collection a particularly interesting one. Allemandas and other climbing or trailing plants cover the sides of this house, and when, as I saw them, a perfect bank of bloom, add greatly to the general effect. Not a flower or a plant is ever parted with for money. Mr. Kimball provides this magnificent exhibition at great expense and without one cent of returning profit. Everyone is made welcome; the sight is perfectly free to all.

In the ever-increasing interest in flower culture in our own people, I look forward to the time when our country can boast such grand collections. We have men of wealth within our borders, and men of as high taste, and of equal benevolence to any in the world.

SPRING TREATMENT OF WINDOW PLANTS.

By G. M. Rogers, Peterboro'.

THE treatment of window plants depends upon so many varying conditions that it would be impossible to lay down rules applicable alike to all cases and kinds, but the suggestion of a few general principles may assist the plant student in the study of the elements which contribute to their successful culture, and upon the closeness of such personal observations will ultimate success depend. The various pro-

portions in which light, heat and moisture contribute to the health and vigor of different plants will always afford an interesting subject for observation to those who take pleasure in cultivating them. As the increasing heat of the season will produce an increased growth, it is well to consider how this should be met.

TRIMMING AND PRUNING.

And first comes, I think, the thorough cleansing and trimming of the plant. Remove all dead and decaying leaves and wood. Freely prune back all such hard-wooded plants as Roses, Fuschias, Heliotropes, etc. Take the plants out where they can be thoroughly doused with water and wash and cleanse them of all insects. If much troubled with the latter, it is often well to remove the surface soil from the pot and replace it with other, so as to get rid of any eggs or larvæ deposited there. The fir tree oil insecticide is commended as a wash by many, but the writer's experience is, that the safest and most effective way to get rid of insects, is to remove them by hand, and that no better wash is wanted than soap and warm water.

REPOTTING.

While nothing is gained by placing plants in unnecessarily large pots, nothing is more important than giving them root room enough to maintain a continuous growth. Better far a vigorous, growing, healthy plant than an aged, decrepit plant, so pot-bound that growth is impossible and disease inevitable. The former is a pleasure to the eye, will resist disease and insects better, and bloom freer; the latter is only a nuisance and an eyesore. So soon as the roots lining the pot show signs of hardening, put them into a slightly larger pot. Keep pots clean, that the plants may breathe the easier through them and keep the surface soil in the pot loose.

WATERING.

When in active growth or bloom plants want plenty of water. Water thoroughly, when you do water, so as to keep the soil moist without soaking it. As water often injures the flowers, it is better, when plants are in bloom, to water direct into the pot and not upon the flowers.

MANURING.

Most plants are greatly improved by the application of a little manure, especially when approaching bloom. This is most effectively applied mixed with water. Any kind of manure will do, the prepared plant-foods being specially easy of application in this way. Care must be taken not to apply too much; there is more danger of overdoing it than not giving enough. Desist on the least sign of wilt or ill-health. The mixing of a little superphosphate or other ground manure with moss and placing on the soil about the plant is highly recommended. The moss serves as a mulch to keep the soil moist and each watering carries a little of the plant food down to the roots.

In conclusion, allow me to suggest that no commoner mistake is made than the attempt to grow more plants than there is room to handle properly. A lesser number, given more room and attention, will give much more satisfactory results. Air and

light are important factors in the health of plants, without which they cannot thrive, and crowding deprives them of both. Use caution in first bringing out the house-plants in the spring ; remember that they have become accustomed to the subdued light and equable temperature of the living-rooms and will be sensitive to the glare of the sun or the chill of the evening. Don't try to bring them out too soon, but let the change be gradual by placing them for a time in a sheltered, shady spot.

FLORICULTURAL.

THESE are my questions—Three Clematis plants were sold to me by an agent about three or four years ago, said to be double blue, double white, and a single cream white. They were good, strong plants, and grow quite close to a blue single flowering Clematis covered with bloom year after year. But these three have shown no signs of flowering all this time. They are laid down, deeply covered, every autumn, and are growing stronger every summer. They were well rooted when I got them. I have been told they are a kind, perhaps, that don't flower. Before I throw them away as useless, please tell me if there is anything I can do better. I don't want them otherwise.

Also, would it do harm to potted plants to water them sometimes with weak washing soda suds, or pearline suds? or would it be good for them?

I have never seen what should be done with Honeysuckle climbers in the autumn, I have one that has not bloomed since I got it ; all the growth of the last year dies the next summer, though it looks pretty green when uncovered in the spring. I do not now the kind it is. I cut the most of it down, as I see it not doing, but the new growth, which is abundant, does not flower.—A GARDENERESS, Peterborough.

By Hermann Simmers, Toronto.

It is somewhat difficult to say whether the Clematis mentioned are worthless, but I imagine they are nothing but the commonest kinds, such as *C. Flammula* and *C. Integrifolia*, which flower but very little, throwing any amount of foliage and but an insignificant flower. If the plants will suit for foliage, keep them, but if for flowering purposes they are worthless.

Watering house plants with washing soda suds is detrimental to their growth; sooner water them with a solution of liquid fertilizer once or twice a week, which will be a benefit, whereas in the other case it has no avail. Regarding the Honeysuckle, you do right to cover it, and the only fault may be want of age. Try it again this summer, and if it still refuses to bloom plant some other variety.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

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Girdling the Concord Grape.

NOTWITHSTANDING the advice of many of our best horticulturists, many vineyardists in Massachusetts strongly favor the girdling of the grape for early maturity, and for increased size of the berry. On the 13th Sept. last, a committee of the Massachusetts Horticultural Society, visited a vineyard of Concords of several acres in extent, near the town of Concord. In one-half of the vineyard girdling had been practised for three years. As a result, although the vines did not appear quite as vigorous in this portion, the fruit was as advanced in ripening as the Moore's Early, while in the other part, the Concords of normal treatment were much smaller in size and hopelessly behind time.

The inference was that, under some circumstances, and with some varieties, there are decided advantages in the process ; and continued experiments in this direction are advisable.

Russian Apples.

ACCORDING to the Iowa Experiment Station, the Russians differ from our ordinary apple trees in such points as the following :—larger flowers, thicker petals, shorter and more stocky pistils and stamens, larger stigmas, anthers and pollen grains; thicker leaves; wood, bark and bud scales of finer texture; and roots penetrating more deeply.

These peculiarities are protective against summer drought and winter cold. Also having been developed in a region of short Summers they ripen their wood early, their Cambriun layers do not contain so much liquid, and are, therefore, less subject to the scalding of the bark on the south-west side, when freezing temperature quickly follows warm weather in early spring.

Kerosene Emulsion for Plant Lice.

To be forewarned is, or should be, to be forearmed. During the dry, hot weather of June and July, these insects become a terrible pest, and increase at

an enormous rate. The earlier the cherry and plum trees are sprayed with the kerosene emulsion the easier these lice are destroyed. The manner of making this is simple—a strong soap-suds is made, and, while boiling, the kerosene is added and well churned, before adding water. The usual formula is : *Kerosene, 2 gals ; Water, 1 gal. ; Soap, ½ lb., mixed as above, and then diluted with about 30 gals. of water.*

The English Sparrow.

At a recent meeting of the Dominion Farmers' Council, at London, the following resolution was passed :—

"That the Dominion Government be asked to offer a small bounty for the heads of English sparrows, and in case that government declines to take action in the matter, that the Ontario Government be asked to do so in this province, and that a copy of this resolution be sent to the agricultural departments of each government, and to the secretaries of fruit growers' and agricultural societies throughout the Dominion."

At our Winter Meeting in Ottawa, a valuable paper on the House Sparrow, by Mr. P. McIlwraith, of Hamilton, was read ; and in it some wise recommendations were given for favoring the destruction of this bird, such as :—(1) Repeal of laws affording it protection ; (2) Enactment of laws legalizing the killing of it at all seasons of the year, and the destruction of its nests, eggs and young ; (3) Enactment of laws protecting the great Northern Shrike, the Sparrow Hawk, and the Screech Owl, which feed largely on the sparrows ; and a resolution was passed asking the government for legislation for carrying out these suggestions.

For a riddance of our premises of them, a good plan is to destroy their nests, eggs and young, by means of a long, light pole, with an iron hook at the point. At the Council above mentioned, Mr. Little reported that he had been successful in poisoning them by placing a dish of wheat soaked with water, in which Paris green had been dissolved, on the eave-trough of the building where it was out of the way of other things.

Treatment of Girdled Trees.

E. A. Riehl, in *Orchard and Garden*, gives the following opportune advice :—

The most satisfactory way of treating trees girdled in the winter by mice or rabbits is to cut them down to the ground and let them make a new stem and top, which they will do quicker and be better trees after than by any other method I have ever tried. The sooner this is done after discovery of the damage the better. Should the girdling extend below the point where the tree was budded or grafted, it will still be better to cut down and then bud or graft the young tree after, or the graft can be inserted at once into the root or collar.

A Portable Propagating Case.

I herewith enclose a sketch of a propagating case now in use in my conservatory, and which pleases me better than anything I have ever before seen. Water (having an oil lamp below) is the heating medium for the sand, and this is preferable to a body of heated air, as sometimes used, a fact that any good propagator will, I think, substantiate.

In the construction of this case (size, three feet by four) a strong board outer case, with no bottom, is made. A tight-fitting glazed sash should be hinged on, and the woodwork is, in the main, finished. Two feet of the lower part is made double, with projecting pieces, as shown, upon which the water tray rests, and other projections on each side, about an inch wide, should be fixed inside the frame, and

about four inches from the bottom, which will hold the sand tray.

Assuming the frame to be four feet

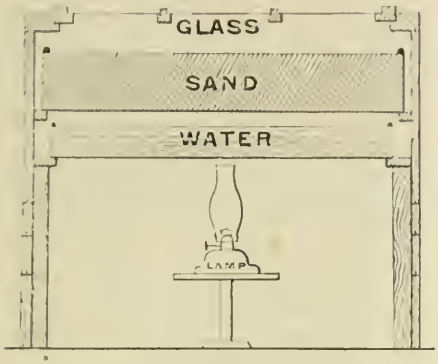

Fig. 25.—A Portable Propagating Case.

long, three feet wide, and two feet deep inside, a tray of fairly stout galvanized iron, three feet nine inches long, two feet nine inches wide, and four inches deep, should be had to form the water tank; and the one for the sand to be half an inch less than the frame in length and breadth, and about six inches deep. Besides these, a kerosene lamp of ordinary form will be necessary to stand under the case to keep the water warm, but not touching the tray, standing on a support to raise it to the proper height. The bottom tray is placed in position and nearly filled with hot water. Then the second tray, half filled with sand, is put into place, and the case covered down. The lamp should be lighted, and after the sand has become warmed the cuttings or seed pans can be placed in; and, by regulating the distance between the lamp and the water tray, a proper uniform heat can be maintained.—Mary A. Newcome, *Bureau Co., Ill., in Popular Gardening.*

QUESTION DRAWER

Asparagus.

15. (1) Can it be grown profitably for a distant market? (2) Is there any better varieties than Conover's? (3) What is the best method of handling and shipping? A Constant Reader, Napanee.

Reply by Jas. Dunlop, gardener, St. Catharines.

1. Yes. 2. None that I have grown. 3. Packed in cases holding, say, five dozen bunches after it is cleaned and trimmed.

Reply by J. A. Bruce, Hamilton.

Asparagus can be grown profitably for a distant market; never knew of a glut in the market—the demand is always equal to the supply.

Conover's is a first-class variety and more largely cultivated than any other. Lenormand's Mammoth and Early Purple Argenteuil are famous varieties in the Paris (France) markets, and are getting better known in America.

Shippers will require to find out the requirements of the markets to which they purpose shipping. As to size of bunch etc.—pack in slatted cases, and on newly mowed grass to put between the different layers.

The following from Burpee's "Kitchen Garden of One Acre," may also help to amplify our replies to our correspondent.

In planting the crowns they should be set at a depth of three or four inches at the most; not one foot under ground, as is the common practice of truckers. Market gardeners cut the shoots as soon as the shoots appear above the surface, so that their shoots are blanched the whole length; but they do this at the expense of their table quality, as only the tips are edible in this way, and even these taste very much like

old hay to any one who has been accustomed to the richness and delicate flavor of shoots cut at the surface when they are from three to four inches in height; this method has also the advantage of not destroying the young shoots just coming up, as the stalks are only cut an inch or so under ground, and the knife only reaches the one intended to be cut. If the appearance of blanched asparagus is desired it can be much better obtained by placing four or five inches of hay, or other litter, over the crowns, which can be pushed away from the stalk when cutting, and easily replaced. There is another strong reason for not following the deep planting, as usually practised, and that is, in having your crowns so much nearer the surface they feel the warming and growing influence of the sun sooner in the season, and you are able to have your asparagus for cutting a full week earlier than your neighbor who plants deep.

The old Purple Top variety is no longer grown, its place having been taken by the larger shoots and better quality of the variety known as Conover's Colossal. This variety, however, has been propagated so extensively and with so little care that it is now almost impossible to obtain seed, or plants, that will produce the splendid shoots of the original stock. Of the new varieties Barr's Mammoth seems to be the most promising, and as grown in some fields in the vicinity of Philadelphia produces shoots which will average nearly an inch in diameter.

A writer in *The Fruit Grower*, Ill, says :—

About 4,000 acres of asparagus are required to supply Boston. One grower had the same bed forty-five years. Sandy soil, with plenty of manure annually, is preferred. Four feet by two is the preferred distance from root to root. Sprouts become crooked from bruises or wounds. Salt is not essential, but useful to kill weeds. Captain Moore, the prizetaker, used none. Mr. Tapley raised asparagus where the tides ran over the beds at times, showing that salt does no harm to it. Mr. Wyman had some on ground trenched three feet deep, and some on land merely ploughed; the latter did the best through twenty years. Deep setting, say six to eight inches, is best, because the stools gradually rise in the soil, and because when set deep cultivation is easier, and the sprouts are less numerous, and therefore larger. But the covering should be sandy.

Vinegar from Rhubarb.

16. Can vinegar be made out of rhubarb juice? If so, how is it done?

I have tried it, but I have not got vinegar yet. Should water be mixed with juice, etc? —J. A. Camerand, Sherbrooke, P.Q.

Reply by C. H. Godfrey, Benton Harbor, Mich.

I can only give a receipt which I have. I never have used it. It is as follows :—Take twelve stalks of Pie Plant, bruise them and pour on five gallons water. After standing twenty-four hours, strain and add nine pounds brown sugar and a small cup of yeast; keep warm a month, strain it and keep in cask until sour enough.

Vinegar should be kept in a warm place to make fast, unless a generator is used.

Frontignan Grapes.

17. Let me know through your paper or otherwise if the Auvergne Frontignon Grape can be grown out doors. I see it is a very early grape and I should presume a Frenchman by the name. By so doing you will bestow a favor upon—F. W. Porter.

There are several varieties of foreign grapes called Frontignan's, as the Black, White, Grizzly Frontignan, etc., all so called from the town of that name in France, where they are largely cultivated for making the

Muscadine or Frontignan wine. In Canada these varieties are tender, subject to mildew, and otherwise unsuited for out of door cultivation, but with more or less artificial heat these fine foreign grapes may be successfully grown.

Fruit Evaporators.

18. Can you inform me of any person in Ontario who manufactures apple evaporators, such as could be sold to individual farmers for preparing their surplus apples for the market. I see by the *Rural New Yorker* that they are made in different parts of the States, and retail from three dollars up to ten. Any information you can give will oblige.—L. H. HAMILTON, Thornbury, Ont.

Victoria vs. Raby Castle Currant.

19. ARE the Raby Castle and the Victoria currant the same, if not, what is the difference? The Victoria is said to be the largest variety grown. How much later is it than the old Red Dutch; as I have it from Lovett, of New Jersey, and Green, of Rochester, it ripens at the same time as our old Red Dutch.—H. MCKEE, Norwich.

We believe that these are but two names for one and the same currant; and Downing in his "Fruits and Fruit Trees of America" gives the preference to the name Victoria. At our meeting held last month in Hamilton, Mr. E. Morden claimed that there is a difference between the two, but we think his position unproven. We would suggest that samples of each be submitted to the fruit committee at our Summer Meeting.

The Victoria ripens about with the Red Dutch, but will hang on the bushes longer, and hence has the reputation of being the latest currant.

Pruning the Gooseberry.

20. How should a Downing gooseberry bush be pruned to ensure finest fruit and largest possible quantity of it?

How much fertilizer, and of what kind, should be applied to a bearing plantation to give the best results?—G. C. MILLER, Middleton, N. S.

The gooseberry should be pruned differently from the currant. The latter needs constant cutting back to encourage as much new wood as possible; the former should not be cut back, but it should be freely thinned. Indeed, without a thorough annual thinning out of the branches, it is impossible to produce fine gooseberries; and probably it is not too much to advise a cutting out of one-half of the head every fall, whether of old or new growth; but retaining the latter in preference to the former, as upon it the fruit is grown. In England the tree form is preferred, but with us the bush form is more popular, as it will live longer and produce more fruit under that method.

Regarding fertilizers for the gooseberry, much will depend upon the needs of the soil as to the kind, but with regard to quantity it can scarcely be made too rich. Barn manure is no doubt the most useful, containing almost every essential element. Potash, either simple, or as supplied in wood ashes, is never out of place in the fruit garden.

The Ailanthus.

21. PLEASE say in your next number if you think the Ailanthus will do well in this latitude?—W. W. R., Toronto.

This useful tree, which was introduced from China about one hundred years ago, is well adapted for street planting, for it grows rapidly, adapts itself to the dust and smoke of the city, and will thrive in the poorest soil. It grows well and is perfectly hardy at Grimsby, and would probably succeed in the latitude of Toronto.

It has one serious fault, viz., that the pollen dust, which is abundant at the blooming season, is very injurious to human beings, producing catarrh, or

other affections of the mucous membrane. This difficulty may be obviated, however, for the tree is dicœcious, that is, the pistils are borne on one tree and the stamens upon another. Now, by planting pistillate trees only, this evil cannot result; and these may be got by making root cuttings from pistillate trees only.

ERRATA.—On page 26, *Apples for Alberta*, the Longfield should be classed among the fall apples instead of among the winter apples.

OPEN LETTERS

Surplus Fruits.

SIR,—The flood ot fruit that inundated Montreal last season from Ontario, would lead an observer to the belief that the Upper Province either does not consume much fruit itself, or that the land is chiefly devoted to producing all the fruits that succeed in a northern latitude. Over-supply causes waste, and there should be some means devised for canning or evaporating the surplus.

It is a mystery to me how growers can afford to harvest and ship fruit for the poor returns they receive, and often it seems that real and serious loss must be the only return for the labor.

When people begin to realize the value of fruit as diet, instead of as a luxury, it will be more encouraging to grow it, for during the summer heated term, it should largely take the place of meat and all food of heating quality.

At present it is a problem not easy to solve, how best to dispose of the surplus, and there is great need of a better and steadier knowledge of the markets in our principal cities to save losses when overstocked.—A. L. J., Chateauguay Basin, P. Q.

Healing Girdled Trees.

SIR,—If any of the readers of THE HORTICULTURIST happen to find some of their apple trees girdled by mice or rabbits in the spring when the snow goes away, they may, perhaps, like well enough to know how I once saved one of mine that was badly girdled by mice, Many years ago when the snow melted in the spring, I found one of my apple trees badly girdled by the mice. The wound was six or seven inches in length, and completely round the tree, and not a particle of bark or rind left in all that space. As soon as I noticed it I piled up a cone of earth around the tree, high enough to cover up all the injured part and more, and let it remain till sometime in the summer. The result was that the tree flourished as well as if it had never been injured at all, and when the earth was removed, I found the girdled part of the tree covered over with a nice, smooth, new bark.

Lest you should think that I lay claim to superior knowledge of botany or fruit growing, I may tell you how I thought of trying that experiment with the girdled tree, as I never heard of the same plan being tried before by anyone.

I had sometimes noticed that when earth was piled up around a tree, new roots would shoot out from the tree into the pile of earth considerably higher than the surface of the ground, so I imagined that if I piled up earth around the girdled apple-tree, some roots might possibly strike out from above the wounded part into the pile of earth and save the tree. But instead of new roots, I found a new bark covering all the injured part, and now I cannot tell which tree is the one that was girdled.

I never had a chance to try the same plan again, as I never had a tree girdled since.—GORDON BURGESS, Durham, Co. of Gray.

We have also had similar experience with Mr. Burgess, in case of trees freshly girdled, especially where the inner bark was not closely eaten off. In such cases, if the wound is at once protected from the drying effects of the atmosphere, either by a mound of earth, or by painting over with linseed oil, a complete restoration of the bark may be expected; but if the inner bark is closely eaten off, or the wound is neglected until the part is dry, the plan will prove futile.—EDITOR.

Results of Advertising.

SIR,—We take pleasure in giving the HORTICULTURIST credit for bringing the first application for our catalogue and prices. We are already in receipt of quite a number from all quarters. One this day from Fredericton, New Brunswick, making special mention of our "ad." in the HORTICULTURIST.—W. E. CHISHOLM, Oakville.

THE

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CHRYSANTHEMUMS.

THE Buttercups and Pansies will have all
been laid to rest,
The Tulips and Carnations all be gathered to
earth's breast,
The Roses and the Lilies will have lost their
sweet perfume
Before to cheer the lonely earth, Chrysan-
themums will bloom.

—*Dart Fairhorne.*

CHRYSANTHEMUM Indicum, "the India plant," has, from time immemorial, been cultivated in India, China and Japan; and in these countries this flower, so free to flower, so easily cultivated, and so varied in its forms, has been a particular favorite. The Chinese and the Japanese have been competing with each other in the production of new varieties, and their success proves that the florist's art is by no means neglected in those distant countries. The Japanese have invested it with especial importance, and regard it as a sacred flower possessed of peculiar religious symbolism. This plant, introduced to America by some traveler, has now become one of our most popular flowers, and is produced by our florists in such infinite variety that none but a specialist could make any pretension to being posted on the endless named varieties that have been catalogued.

So great has become the rage for this flower that at least a million plants were sold by the florists of America last Spring, and probably a larger number, still, will be sold this season. Chrysanthemum shows, of two or three days each, are the order of the day in Autumn both in Europe and America, and are attended by thousands of people.

It is deservedly thus popular, for what compeer has it among our late Autumn flowering plants, thriving as it does equally well in the small city lot, or the ample area about the suburban or country residence.

The three principal classes of Chrysanthemums are thus described by MR. JAS. VICK, ROCHESTER: *Chinese*, bearing a large, loose, graceful flower; the *Pompon*, with small and perfectly double flower in great abundance; the *Japanese*, with ragged fringe-like flowers, like the Chinese, only more so, and the *Anemone, flowered* or quilled. Our colored plate represents several choice varieties, which group together in a charming bouquet, viz.: (1) POMPONS, *Perfection*, reddish brown; and *Model*

of Perfection, pink, margined with white; (2) CHINESE, *Amphilla*, bright crimson; (3) JAPANESE, *La Charineuse*, purple, shaded lilac and white; and (4) ANEMONE FLOWERED, *Tricolor*.

Regarding the CULTIVATION of the Chrysanthemum, we give the following valuable extract from a paper by Mr. A. H. Feukes, read before the Massachusetts Horticultural Society, at Boston:—

The *cultivation* of the Chrysanthemum should begin as soon as the plant is through flowering, for it is in a great measure upon the health of the cutting taken from the old plant that future success depends. Many growers, as soon as the plant has flowered, cut it down to the pot; but this is a very risky thing to do, as many varieties have a weak constitution, and will sometimes refuse to start into growth if the old tops are cut off too soon. The best way is to cut the branches back quite severely at first, but not to cut the plant down to the pot until the shoots have begun to start quite freely from the roots.

The Chrysanthemum is essentially a sun-loving plant, and any encroachment on its rights is fully paid for in sickly plants and flowers devoid of that exquisite coloring that should make them so charming. The plants, as soon as they are through flowering, should be put in the sunniest place possible, and have plenty of fresh air, judicious watering, and a temperature of about 50° or 55°.

An April cutting that has never been checked is much better than one started in February or March, and allowed to become pot-bound, for one great secret of success in Chrysanthemum culture is to be found in keeping the plants in a healthy growing condition from the time the cuttings are made until they come into flower.

Pinching may begin as soon as the plant is about six inches high. Pinch out the smallest amount possible from the growing end, never cutting back to hard wood except in cases of unshapely growth. Pinching is best done a few days or a week before the plant is shifted to a larger pot, for by this time the new shoots have begun to start, and will be in condition to use the nourishment supplied by the fresh soil.

For planting out, such a location should be chosen as will, at all times, have a full exposure to the sun and air. It is desirable that it should be so situated as to be protected from strong winds, but this must not interfere with the prime necessities of sun and air. The plants can be so staked and tied that they will withstand all ordinary winds, but nothing will supply the deficiency of direct sunlight and fresh air.

A light, rich loam is the best soil; if possible, it should be quite sandy, so as not to adhere to the roots in hard lumps, but to fall away without taking the roots with it. With a proper soil and a high, open exposure, there need be little fear of mildew, the one nearly unconquerable enemy of the Chrysanthemum grower.

The plants should be placed in rows, about two-and-a-half or three feet apart each way. For each plant a hole about the size of a potato hill is dug and filled with manure, which is well forked into the soil. The plant is placed in the hole, which is

then filled up with loam, being careful that the surface is lower than the surrounding ground, so as to retain any water that may be given to the plants.

The plants are to be kept well watered until the roots have taken hold of the soil, after which they receive no water unless the season is dry and they show signs of suffering, when they may have it as often as needed, occasionally substituting liquid manure. Whichever is used should be applied at evening, so as not to be evaporated before it has time to soak into the ground. As soon as the roots begin to take hold of the soil, the plants will push out branches very freely, which should be pinched as soon as they are four inches long, repeating the operation as often as the branches become long enough, and continuing until about the middle of July, after which the plants may be allowed to grow at will, simply cutting back any unshapely branches. The most severe pinching is done while the plants are quite small, so as to secure as many branches near the bottom as possible. These remarks do not apply to varieties that make shapely plants without pinching; such had better be left to themselves.

The worst insect pest is the black aphis, which will cause much trouble if allowed to increase. Dalmatian powder, applied with a bellows, is an effectual remedy.

About the second or third week in August the plants are lifted, the best time being when the ground is very dry, for the plants will then recover sooner than when it is moist. They are taken up thus early because it is better that they should form their buds after potting, for, if formed before, their potting will cause a severe check which is apt to result in deformed or one-sided flowers.

The plants are lifted with all the roots that can be secured; but in order to get them into reasonable-sized pots considerable of the soil is carefully shaken off, provided it is light enough to fall off easily without breaking into lumps. For potting, soil containing more manure than that for the small plant is used—about two parts of good loam to one of well-rotted stable manure. The pots are selected according to the size of the roots, being careful not to have them too large.

In potting large plants the soil should never reach higher than an inch from the rim of the pot, so as to leave ample room for an abundance of water and liquid manure.

After the plants are potted they are placed under trees where they can have plenty of air, but at the same time be shaded from the hot sun. They remain here about a week, or until they seem to have recovered, when they are taken to the ground where they grew, and plunged to the rim of the pot in the soil. As they begin to grow they must have plenty of water and never become dry. The young roots soon reach the sides of the pot, after which liquid manure may be freely given as long as the buds are growing.

As cold nights approach, the plants are placed under glass, even before actual frost appears. It is a mistake to try to keep the plants out until the actual appearance of hard frost, for we have many nights not cold enough

to freeze, but cold enough to check their growth, and this checking of their growth is an acknowledged cause of mildew wherever it appears.

Those who wish to cultivate Chrysanthemums, but have no house, will do best to procure young, healthy plants in May, giving the treatment above advised after that time, until the time for housing, when they may be taken in on cold nights and placed out of doors through the day. As house plants, they should be kept well watered, syringed as often as possible, being careful not to wet the flowers, and kept in the coolest, airiest place to be found. The black aphis, or black fly, is usually found quite troublesome, but can be conquered by persistent application of Dalmation powder with the bellows.

If it is desirable to keep the old roots over the winter, they should be placed where they will be kept quite cool, and, if possible, near a sunny window. Early in the spring they may be divided and planted out in the open ground and receive the same treatment as young plants.

A REPORT ON THE CRANDALL, THE NEW BLACK CURRANT.

Sir,—I notice in your February issue an inquiry, No. 14, as to the Crandall Currant. I enclose my experience with growing it for two years. E. E. S.

A SEASON'S trial of this new form among the currant family shows that it really has some very desirable qualities. In spite of the severe drought of last summer it made a most vigorous growth, fruiting on the one-year old wood. The Crandall is like the common Black Currant in being absolutely free from insect enemies, either here in New York State, or in Ohio, or in its original home of Kansas, but differs from it in not having that peculiar odor, resembling *Cimex lectularius*, a well-known household insect; the taste is like a ripe gooseberry, with something of the sub-acid quality of the Red Currant. For pies, jellies and jams, it is not inferior to any of the small fruits, which were similarly treated, and unlike Raspberries, especially it has but few seeds.

As far as the disseminators, Messrs. Frank Ford & Sons, of Ravenna, O., are able to learn, the Crandall is a hybrid from the Red Cherry Currant (*Ribes rubrum*), and the Missouri Yellow (*Ribes aureum*), and, with me, its habit and productiveness confirm that idea. The color is a shiny bluish black; the size ranges from a half inch to three quarters of an inch in diameter, greatly resembling a Concord Grape; and as a market fruit it seems almost without a rival. E. E. Summey, *La Salle, N.Y.*

Note by Editor.—We have procured an engraving of this Currant, and here give it place; but wish it to be understood that we do not know of its having as yet been fruited in Canada, and therefore we only recommend it for trial.

FIG. 26.—THE CRANDALL CURRANT.

SEXUALITY OF THE STRAWBERRY PLANTS.

SIR,—Can you explain the following discrepancy:—Charles Green says Hermaphrodite strawberries are productive under all circumstances. Pistillate and Staminate only when planted within say ten feet of each other. Knapp says that they may be divided into two kinds, H. and P. The Staminate being always barren, which I take it means it to be of no account.—J. C.

THE study of sexuality of the varieties of strawberries is almost indispensable to the success of the

strawberry grower. The Wilson, for example, will produce fruit in abundance wholly isolated from any other variety, but the Crescent, similarly situated, will bear comparatively light crops. The reason of this is evident upon the examination of the flowers of the plants themselves, for we find the Wilson to be a perfect flower, having both stamens and pistils, as is shown in fig. 27, in which the central portion is a group of pistils, or organs of the flower in which the seed is produced. Around these may be seen a fringe of stamens, or

FIG. 27.

FIG. 28.

organs which bear upon their tips little pods called anthers, full of a fine yellow dust called pollen. Now unless the pistils receive a portion of this pollen the seed never will mature, and if the seed fails to mature, the strawberry, which is but the receptacle which holds the flower and later the seeds, will never develop. The Wilson, having a supply of its own, as represented, never fails in this respect, and is therefore called *perfect* or *hermaphrodite*. The Crescent blossom, shown in fig. 28, has pistils, but is almost entirely lacking in stamens. It must, therefore, depend upon the pollen of some perfect variety growing near, as the Wilson, and is called *pistillate*. In addition to these two classes there is a third, or *staminate* class, in which the flowers have stamens, while the pistils are few and imperfect. These latter class, it is evident, can not bear fruit under any circumstances, whether near to or far from pistillate plants. This latter class does not exist among cultivated varieties, and hence Mr. Knapp's statement that strawberries may be divided into two classes, hermaphrodite and pistillate.

From the above it is evident that to attain the best results with pistillate varieties, hermaphrodites should be planted in proximity. Growers differ as to just what distance is necessary to attain the best results; some advising a row of pistillate every third or fourth row, while others think one in seven quite sufficient.

As to the kinds which succeed best in company, much success has been attained with Crescents (P), fertilized with Captain Jack (H), for quantity, or with Sharpless (H) for size; also with Manchester (P), fertilized with Sharpless (H).

THE WOOD-PECKER ON THE BIRCH TREE.

By D. Nicol, Cataraqui, Ont.

THE vermilion crested wood-pecker—I am not sure about his specified name, but he looks very like the *Picus Pubescens*,*—is a bird about six and a half inches long, frequenting orchards and ornamental grounds in the neighborhood of dwellings, and with which almost every one interested in the growth of trees is familiar.

Its color is black and white speckled. The male differs from the female, in that he has a vermilion colored patch on the top or rather the back of his head. He is easily distinguished from some other birds of the same genus, by his loud single note uttered, and sometimes repeated, as he darts from one tree to another. The young males are not adorned with the bright crest until they are over one year old; consequently with their first coat of plumage they look very much like the mother.

He is a native of North America, and remains in Ontario throughout the year. He is a remarkably ingenious and industrious bird.

For a place in which to make their nest, a hole, as circular as if described by a pair of compasses, is cut in the solid wood of a tree, the first part about six or eight inches horizontally, then downwards to the depth of eight or ten inches, roomy and capacious at the bottom, and smooth as if polished by a cabinet-maker. The entrance is judiciously left just large enough for admittance.

The eggs, generally six in number and pure white, are laid in the smooth bottom of this chamber. The male supplies the female with food, and about the first week in June the young may be seen climbing the tree with considerable dexterity.

The bird spends some portion of his time hunting for insects on apple and other trees, throwing off the outer bark scales and moss in order to get at his prey, such as spiders and their eggs, wood-lice, ants and probably some insects that may be injurious to the apple tree, although he never touches the bark louse. He also has a mischievous habit of boring small holes through the bark, about half an inch apart, in pretty regular horizontal circles around the body of the tree, as illustrated in accompanying figure, making it appear as if some human genius had spent some time boring the tree with a gimlet.

I have seen orchards in which almost every apple tree was perforated with thousands of these small holes; yet although many of the trees were seriously injured, I am not

*Sir,—Since I forwarded to you article on the "Wood-pecker," I have found the same bird fully described in Mr. McIlwraith's "Birds of Ontario," as "The yellow-bellied sap-sucker," Sphyrapicus Varius (Linn). Here he is said to be migratory, but he sometimes stays very late and returns very early. He could be seen here in February this year.

March 28th, 1889. D. Nicol.

aware of any being killed outright by the operations.

Not so, however, with the White Birch, the Weeping and the Cut-Leaf Birch. With this class of trees fatal results have of late years become quite common. In Cataraqui Cemetery, Kingston, during the last three years' time, Cut-Leaved and Weeping Birch have been killed by this wood pecker. On the fine smooth bark of this class of trees he bores the holes much closer together than on rough-barked trees, and the circles of holes are placed so much closer together that the tree may be said to be completely barked in some places as much as one foot lengthwise the whole circumference of the tree. Whatever of the bark is left on the wounded spot soon dies, so that the tree when not killed at once, only lingers with a decaying existence for a few years.

When the boring is done in spring as it most generally is, the evil effects are much more apparent because the sap flows profusely from every wound, consequently some of the trees actually bleed to death. He also attacks the Mountain Ash, Linden, Larch, Butternut, Blackwalnut, Scotch and Austrian pine and Norway spruce in the same way, but seldom kills any of the five sorts.

One thing particularly noticeable is that he hardly ever attacks a sickly or decaying tree. His depredations have lately become so prevalent in this part of the country that he is now considered the greatest pest that landscape gardeners have to contend with.

Some naturalists aver that he bores in search of the larvæ of insects which, if allowed to remain unmolested, would ultimately destroy the tree. I think this statement is incorrect, for after having made very close investigations, I have failed to find any symptoms of insect life under the inner bark of such trees as have been attacked, and I am not aware of any of the trees mentioned ever being injured by any kind of insects which could have existed in a larvæ state where he so incessantly labors.

If there may be any animal life under the inner bark, it must be in the form of animalculæ, and I have been forced to the conclusion that he bores chiefly for the sap, which I have no hesitation in saying he drinks freely of. My belief in this theory is strengthened by the fact that he is often seen to keep his chisel-pointed bill inserted for a time in some of the newly-bored holes. I have no doubt it is this habit which has brought on him the opprobrious name of sap-sucker, by which name he is now known hereabout.

It is said by some that he taps the trees with a view of attracting insects, and that when they become gorged with sap they become an easy prey for him. I am not prepared to dispute this point, I am rather inclined to believe there may be some truth in the statement.

At all events, whatever may be his motives for boring so many holes, the evil is immeasurably greater than all the good he does. Therefore I am obliged to adopt means of extirpating him, the best of which I have found to be the shot-gun, using fine shot so as not to injure the bark of the tree.

March 11th, 1889.

NOTES ON VARIETIES OF SMALL FRUITS.

By W. W. Hilborn, Experimental Farm, Ottawa.

AS the time when planting will soon be at hand, a few notes of varieties of small fruits will perhaps be interesting to some of the readers of the Horticulturist.

Ninety sorts of strawberries were in full fruiting on the Experimental Farm, Ottawa, last season. The weather was unusually dry during the period of ripening, which had a very injurious effect on the yield of fruit. Late varieties suffered most. Among the new sorts, *Monmouth* was the most promising for first early; *Bubach* produced the largest crop of any new kind in the collection. It will average, large to very large, quite early, not firm enough to stand shipment a long distance, but for home use or near market, it promises to be of much value. *Jessie* is of the same type; more firm; better in quality; a little later in ripening but not as productive or as vigorous and healthy in plant and foliage *Lida* was the most wonderfully productive plant I have ever seen, but it is not vigorous enough in growth. There is not sufficient foliage to protect the fruit from being injured by sun scald. To succeed well it must have very strong rich soil and good cultivation. *Pine-apple* is a promising new sort for home use. It is not firm enough for market; it is of fine flavor; healthy in foliage; plant vigorous and productive. *Annie Forrest, Crawford, Daisy, Enhance, Gandy, Ontario, Pearl and Woodhouse* are all worthy of trial for market.

Itasca and *Belmont* were quite unproductive and the fruit was not of attractive appearance. *Covill* was very early but after the first picking the fruit ran too small in size. *Excelsior* and *Hoffman's Seedling* of no special value, fruit not large or firm enough.

Several of the older kinds that have not been very generally tested throughout the country, proved quite promising and should have a more extended trial. They would no doubt prove valuable in many localities. *Woodruff* made a good showing; the fruit was large, conical, often wedge-shaped and very firm. The plant, although not large, is very healthy and productive. *Atlantic* produced a fine crop of large, beautiful, bright, dark crimson berries, nearly or quite as firm as Wilson. But few if any, either old or new sort, produced a larger crop than did the *Maggie*: it is rather dull in color and not firm enough to stand shipment to a distant market. *Seneca Queen* is valuable for home use, especially on light sandy soil. *Lacon* is a very productive sort, fruit large, irregular, quite acid; plant very large and usually healthy; it is more easily affected by drought than most sorts. *May King* has not thus far proven to be a valuable market sort, not firm or productive enough.

Among the old, well-tested kinds, *Crescent, Cap. Jack, Manchester* and *Wilson* are the most profitable in the order named.

RASPBERRIES.

Turner, *Cuthbert*, *Golden Queen*, *Johnson's Sweet*, *Tyler*, *Hilborn*, *Gregg* and *Shaffer's* are the best varieties either for home use or market that has been fully tested. *Ada* and *Palmer*, two new sorts that are being introduced this Spring, did not show any superior merits over those named above. Some of Prof. Saunders' Seedlings and Hybrids gave evidence of superior merit, but more time is required to judge fully as to the value compared with the standard sorts already in cultivation.

BLACKBERRIES.

Snyder and *Taylor's Prolific* were the best among the older varieties. *Agawam* is quite hardy but does not appear to be very productive. *Stone's Hardy* is small in size and not equal to *Snyder*. *Minnewaski* appeared the most promising among the new sorts. *Erie* is quite tender. I think it will be valuable only in favorable localities.

RUSSIAN APRICOTS.

MR. SECRETARY :—From the reports of the meeting of the Ontario Fruit Growers' Association, published in the newspapers, it appears that the meeting * was of the opinion that the Russian varieties of the apricot were a failure, notwithstanding that *not one member* present had any personal *experience with the fruit*.

If the gentlemen who were so free to condemn that of which they knew nothing, had taken any pains to inform themselves, they might have learned that the evidence was all the other way.

This fruit was first grown in America by emigrants from Russia, who thought so highly of it that they brought the seeds with them. They settled in Nebraska, planted the pits, and from them sprang trees which proved to be hardy enough to endure the low temperature of thirty degrees below zero. From these there has sprung a race of hardy apricots of choice quality, known under the general appellation of Russian apricots, but bearing distinct names, such as Alexis, Alexander, Budd, Gibb, Nicholas, etc.

We are indebted to Messrs. Carpenter & Gage, of Fairbury, Nebraska, whose reputation as Nurserymen is unsullied, for the dissemination of these choice varieties. Living in the state where the emigrants from Russia settled, and having every opportunity of knowing the hardiness of the trees, the quality of the fruit, and time of ripening, they do not hesitate to speak of them in the following terms :—

Gibb :—Fruit medium, yellow, subacid, rich, juicy, season June 20th.

Alexander :—Fruit large, yellow flecked with red, sweet, delicious, season July 1st.

Nicholas :—Fruit medium to large, white, sweet, melting, season July 10th.

Alexis :—Fruit arge to very large,

*No opinion was expressed by the meeting as such, only by two or three individuals.—EDITOR.

yellow with red cheeks, slightly acid, rich and luscious, season July 15th.

Catharine:—Fruit medium, yellow, mild, sub-acid, season July 20th.

J. L. Budd:—Fruit large, white with red cheeks, sweet, extra fine, with a sweet kernel as fine flavored as the almond, season August 1st.

Furthermore these gentlemen state that the trees are very hardy, standing uninjured when the *Moorpark*, *Golden*, *Breda*, etc., are frozen to the ground, enduring 38° below zero without a twig being injured:

That thus far they have been free from the ravages of insects and diseases; the borer does not molest them, nor the black-rot, nor the blight:

That the trees come into bearing as early as the Peach, and, the fruit being as valuable, these apricots will make a very desirable substitute for the peach in latitudes where that tree cannot be successfully raised:

That the fruit stands shipping better than the peach, and will keep longer after being picked.

The testimony of these gentlemen is fully confirmed by the editor of the *Emporia Republican*, Kansas; by Mr. E. L. Meyer and Mr. A. Tawny, of Iowa.

Now to come a little nearer home. Learning that Mr. Hayden, of Ridgetown, County of Kent, had lived in Nebraska, I wrote to him for his opinion of the Russian Apricots, and received the following reply:—

Ridgetown, Ont., Jan. 29th, 1889.

MR. D. W. BEADLE, St. Catharines,

DEAR SIR,—In regard to the Russian Apricots, from my experience and observation in Nebraska, I believe them to be a valuable fruit to cultivate in this latitude, as it proves to be perfectly hardy there where the Peach was a failure. The trees I planted there fruited the second season, ripened about the last of August and were fine flavored, nearly if not quite equal to the Peach From its hardiness, and its being a great bearer, I believe it will prove valuable here. —O. M. HAYDEN.

Besides all this it happens that one of my St. Catharines neighbors had planted some of the Russian Apricots four years ago. These were not the improved varieties that are now being disseminated, but seedlings raised from the pits of those growing in Nebraska. I made inquiry of him as to his experience with this fruit and he replied as follows:—

St. Catharines, Ont., Jan. 12th, 1889.

MR. D. W. BEADLE,

DEAR SIR,—The Russian Apricots which I purchased some four years ago, have borne two good crops. The trees yield heavy loads of fruit, which is larger and of much finer quality than any other I ever saw. You can safely recommend them to everyone as a truly valuable fruit that thrives well in our climate.—CHAS. SMITH, Queenston street.

With all this testimony before me I do not hesitate to say that the Russian Apricots have not proven a failure, that they are well worthy of further trial in Canada, wherever the Baldwin apple tree will flourish; that they promise to be more certain to yield fruit than the peach and therefore likely to be more profitable; that they will be exempt from the "yellows," that terrible disease of the peach; and possibly are exempt from the borer, that so often kills the peach trees.—D. W. BEADLE.

WHITE GRAPE CURRANT.

By S. H. Mitchell, St. Mary's, Ont.

IT often happens that fruit growers, in their eager desire to obtain and test new and rare varieties of fruits, plants, etc., overlook the real merits of many of the older kinds. I believe this is particularly true with reference to the merits of the White Grape Currant. It is a variety of slow and rather dwarf growth, and being an enormous bearer it requires, and must have, extra good cultivation and heavy manuring, or it will soon exhaust itself and become useless.

Some years ago I planted a number of long rows of different sorts of currants and gooseberries to grow fruit for our market, with a view of testing what varieties would give the largest net profits. The rows were set six feet apart, and the bushes were set about three and a half fee apart in the rows. In currants, I planted White Grape, Red Cherry, and Black Naples. The result was that, although the ground was good, and I kept it clean and well cultivated, the White Grape bore such enormous crops that I could not get it to grow wood, and the bushes were becoming stunted. I then gave the land a dressing of unleached ashes, about three quarts to each bush. I spread it evenly over the ground early in the Spring and cultivated it in; and afterward as soon as the fruit was set I spread the land all over as evenly as possible, with about three inches of rough manure. No more is done to it except to pull up some odd weeds that may force their way through until all the fruit is gathered.

Then the horse cultivator is run through between the rows two or three times, and the ground under the bushes cultivated and cleaned with spading, fork and hoe. The cultivating and hand cleaning is repeated in the Spring. The ashes and heavy coat of manure are put on every Spring. The result has been that the White Grape bore so heavy and such beautiful fruit that the profit from a row of the White Grape was more than double that of the Cherry Currant, and more than three times that of the Black Naples.

I then dug up all the Black Naples and burned them (as I do not believe in growing for market what does not pay), and planted the ground with Houghton Gooseberries. I kept the Cherry Currant two years longer, when the borer attacked them very badly, and as the large wood died and was pruned out, a rank growth of new wood sprang up. The large soft pith in the new wood seemed to just suit the borers, and they became unprofitable. I then dug them up and planted the ground with White Grape Currant.

For the past seven years, with the above treatment, my White Grape Currants have borne enormous crops, and proved the most profitable small fruit I have tried. I may add that so far they have been troubled with the borer very little. The reason they are not hurt with the borer lies in the fact that they make a slow

growth of very hard wood, so that the borer fails to penetrate them.

And here let me say that, in my opinion, we have no other currant that equals them in *quality*, *productiveness* and *beauty*.

THE EARLIEST PAY THE BEST.

By E. E. Summey, La Salle, N.Y.

THE above assertion none, doubtless, will dispute. During ten years' experience in gardening, while generally successful in the early vegetable line, yet our constant study was to get small fruits in the market ahead of the main crop, and we obtained plants of many varieties, among them being a raspberry and a strawberry, which, after a two years' acquaintance, we find fills the bill. Thompson's Early Prolific Red Raspberry and the Haverland Strawberry equal many of the older ones as to quality; are early, extremely productive, and stood the severe drouths of 1887-8—the best of many sorts. These points counted with us, and likely do the same with other growers.

M. T. Thompson, of Lakewood, Ont., is fortunate in having disseminated two such valuable plants. The Haverland resembles the Crescent in habit, and also has imperfect flowers (May King being used as a fertilizer), but is much more vigorous and productive, with better flavor, nearly as early as Covill's Early, but larger. Numerous correspondents have attested to its being adapted to a great variety of soils and climate, among whom is Matthew Crawford, the celebrated expert, who writes that on a row sixteen feet long and six inches wide he picked at one time four-and-a-half quarts, and adds that he has never seen any variety that would surpass it. Of the fruit, many specimens were nearly two inches long, ripens all over a bright red, and yields more of a crop on spring set plants than any other.

The Early Prolific is a robust grower, standing our drouth excellently, and friends in the South say that it appears to be of special value in that hot section. This berry has riponed perfectly, while in the same the Gregg dried upon the bushes, several acres not yielding a bushel of ripe fruit. It has not been injured by 22° below zero, and has come in a full week ahead of the Hansell with fine fruit, just as the strawberries were over.

HINTS ON GRAPE CULTURE.

THE following hints on this subject by Lewis Roesch, of Fredonia, N.Y., are seasonable and worthy of the attention of our readers:

Grape and small fruit culture depends for success on the same conditions as ordinary farming. These are mainly liberal fertilizing, a careful preparation of ground, proper care and culture at the right time, and a judicious selection of varieties

suited to the soil, climate, purpose and market. First of importance for fruit growing is a dry soil. Ground too wet for winter wheat should be underdrained, unless plowing it up into narrow lands with deep dead-furrows between be sufficient. A loamy soil is considered best, and sand or gravel preferable to stiff clay. Whatever manure is used should be plowed or harrowed in before planting, or else placed around vines, but not in direct contact with them.

What and When to Plant.—Plant mainly of varieties that are generally successful, and such as do best in your own neighborhood, but do not confine yourself to them alone. Try other well recommended kinds and new varieries. Be enterprising. If you are the first in a community who learns of the merits of a new kind you may get more satisfaction and money out of a small lot of them than you would out of a large lot of common kinds. Plant at the earliest moment possible. If that be in the Fall, do not wait until Spring. If it be in the Spring, there is certainly nothing to be gained by waiting until Fall.

Care of Stock when Received.—When the stock arrives, unpack and plant at once. Should it, however, appear frozen, do not unpack, but cover it up in a cool, dark cellar, where it may thaw out gradually. Freezing does not injure plants, but rapid thawing with exposure to light and air does. If not ready to plant when received, heel them in, in a dry place, protected both against sun and sweeping winds. Dig a trench deep enough to hold the vines or plants, open the bundles and spread them out against the side of the trench an inch or two thick; cover them with a layer of soil, which press firmly against the vines to exclude air, put on another layer of vines and soil, until completed, taking great care to keep the different varieties separate and well labeled. If the stock is to be left heeled in over winter, both root and top must be well covered with earth, and over that place a cover of coarse horse manure and other litter to insure safety.

Selection of Varieties.—Beginners in fruit culture are often puzzled as to what to select from among the multitude of varieties offered. To such we would say that climatic conditions and other circumstances generally so limit the planter in his selection that he has usually but a comparatively small number to select from, and often too few indeed. In the extreme North they are short seasons and severe climate, so that none but the hardiest and earliest varieties succeed. In sections where the best can be grown, nothing else is wanted. For family use, only the best that can be well grown are desirable. For market, the most profitable only. What those are, each particular locality and market must determine. The most profitable in one locality and market may or may not be so in another. For keeping, and distant shipping, tough-skinned varieties are preferable. In sections where grapes are much subject to mildew and rot, only the most robust and healthy should be selected.

Varieties of the Labrusca class, at the head of which stands the Concord, succeed over a larger extent of territory than any other, and are particularly recommended for planting in the North and North-west. To this class belong the new varieties: Early Victor, Lady, Eaton, Moore's Diamond, Moore's Early, Niagara, Pocklington, Vergennes, Worden, etc. Varieties of the Riparia class, such as Amber, Elvira, Noah, etc., seem better adapted to the South and South-west.

Regarding Rogers Hybrids, Agawam, Lindley, etc., we would add that although they are not as reliable as some other varieties, being more or less subject to rot and mildew in unfavorable localities and

seasons, yet they are of the best for all purposes where they do succeed. Large to very large in bunch and berry, good keepers and shippers, strong growers, productive, and of the best quality.

The following we do not recommend; Adirondac, Concord Chasselas, Concord Muscat, Creveling, Eumelan, Rebecca, Rogers No. 2, 5, 7, 8, 13, 17, 24, 30, Senasqua. They have been superceded by newer varities, but as we yet have more or less call for them we keep them on the list.

The following new varieties we do not find of sufficient value to recommend; Amber Queen, August Giant, Norfolk, Norwood, Oriental.

Planting.—Strong growing varieties as Concord, Niagaras, Rogers Hybrids, etc., should be planted eight to ten feet apart each way; and weaker growers as Delawares, Ladies, Jessicas, etc., some six to eight feet apart according to the strength and quality of soil. In cold climates and exposed situations plant deeper than in warm ones, to avoid injury by severe freezing. For same reason plant deeper in a loose soil than in a compact one. If the soil is clayey or wet, plant some eight or twelve inches deep, and in the Fall plow up to them, leaving a dead furrow between the rows to carry off the water. But if the grounds be dry and gravelly or sandy, plant no. less than fourteen to twenty inches deep. While planting the vines use care not to let the roots get dry. Cut them back to about a foot long and dig the hole large enough so the roots can be spread out in it, about as they grew in the nursery. Work good, rich, fine and moist surface soil around and amongst the roots until they are all covered, when they should be firmly tramped down. Cover up but partially at first, and level off gradually during the season. After planting, trim vines back to within two or three buds of the ground.

The pruning may be done any time after the leaves fall in the Autumn and before the sap starts in the Spring, although a little bleeding will do them no harm.

Yield.—In ordinary vineyard culture, from two to four tons per acre and from five to fifteen pounds per vine, according to variety, is a fair average yield. However, six to eight tons per acre are sometimes produced, and single vines have been known to yield bushels of fruit.

EMBELLISHMENT OF SCHOOL GROUNDS.

IN a paper recently read before the Massachusetts Horticultural Society, Mr. L. M. Chase, Master of the Dudley School, Roxboro, ably advocated an increased amount of attention to this matter. And in this he is in accord with the spirit of our Association, which has been endeavoring to draw public attention to the bare appearance of many of our rural school grounds, and to the possibility of making them each models for private lawns and pleasure grounds; and by planting collections of our native trees and shrubs, properly labeled, to educate our children in this department of horticulture. He said:—

The educational influence of a fine public building with grounds laid out in good taste is great. Among a number of examples I will mention the City of Toronto, Can., one of the handsomest on this continent, the beauty of whose school and other

public grounds—made beautiful by tree and flower planting—is celebrated throughout the world. The result is that a great majority of the homes, whether magnificent or mean, are adorned with fine trees and flowers. If the influence on mature natures is so great, what must it be upon young children, whose tastes and habits of thought are not fixed! The celebrated Locke declares that he gained more ideas before he was five years old than in all the rest of his life, and the Jesuits say that if they can have the education of a child until he is seven, they don't care who teaches him afterwards. Indeed, the permanence of early impressions has become a proverb. We cannot, then, begin too early to establish right conceptions of moral and natural beauty in the hearts of the young.

The recent words of the school committeeman who, in reply to the charge of lavish expenditures for schools, declared that "a child is at least as valuable as a paving stone," deserve immortality.

School grounds should be separated into two distinct portions—one for an outdoor gymnasium, and devoted entirely to that purpose; the other should be devoted to turf, trees, shrubs, flowers and walks. Pupils should be taught that everything which adds to the beauty of this place must be carefully preserved. Every plant should be labeled and catalogued, and most carefully nurtured. The play-grounds should have seats against the fences, a shelter from rain and heat, and a supply of pure water. All outbuildings should be screened by lattice work, or, better, by climbing vines like the Woodbine, Virginia Creeper, etc. Pupils should be early led to take an interest in the cultivated part of the grounds. They will soon love the plants and learn how to care for them. When this occurs, thefts and destruction of flowers, so common in many places, will almost entirely disappear, and most happy results will come in the evident elevation and refinement of the moral sentiments of our children.

Rightly improved, trees, vines, shrubs and flowers can be made most important auxiliaries in instructing and developing our young children, furnishing means for numberless object lessons, even in our primary schools. Such lessons are learned without effort, and even with delight by children who find other school tasks irksome. I have been told by several persons that they first learned to love school through their nature lessons. Such instruction will never be forgotten, and will produce important results in mature life. In the words of that excellent paper, *Garden and Forest*, "Appreciation comes with knowledge, and until our people learn about our trees—their value, their qualities and uses, the history of their lives, their distribution and relationship to the trees of the rest of the world—they will never really appreciate nor value them, or learn to care for and protect them. If there is ever in the United States a stable, successful and popular system of forest control and forest management, applicable alike to the forests of the State and to the humble wood lot of the smallest farmer, it will rest upon a basis of a knowledge of trees and their importance to the community, commenced in the primary schools."

The time is near when, as in Germany, there will be connected with all our school grounds cultivated portions, in which can be found flowers in bloom, from the early snowdrop to the late-blooming chrysanthemum, and typical specimens of our finest native trees and shrubs, and small beds of broken ground where seeds can be sown from which children may see the mystery of germination and plant development. These will serve the double purpose of beautifying the premises and affording aid in practical instruction in natural science.

SOW FLOWER SEEDS IN COLD FRAMES.

FOR the proper germination of seeds of all kinds, two things, heat and moisture, are absolutely necessary. If the soil is wet and cold, many kinds rot, and if too warm and dry the seed will not sprout, or if they do the tender sprouts burn up before they reach the surface. Hotbeds are very useful for forwarding of plants, but inexperienced persons had better not attempt to start seeds in them, unless they are willing to learn by dear-bought experience just how to manage them, until they have become familiar with the management of a cold frame. A cold frame possesses nearly all the advantages of a hot-bed and is the very best plan for starting flower seeds. It is made by making a frame of four boards, the back one about a foot to 18 inches wide, and sloping to six inches in front. This is to be placed on a nicely prepared bed in some warm, sheltered spot in the garden, like the south side of a building or fence, and covered with glass, either regular hotbed sash, or, if these are not to be had, common window sash.

Make the soil in the frame very fine, and press it down quite hard and smooth with a board or the back of a hoe, and then sow the seeds on the surface, broadcast, thinly and evenly, in squares that have been marked out. This is a much better way than to sow them in drills. Label each sort with a short stick stuck in the ground. After they are all sowed cover them with soil of a light, sandy nature, that has been sifted through a sieve, by carefully sprinkling it over them, covering each set to a depth corresponding to the size of the seeds. Many fail with seeds because they cover them too deep. Very small seeds, like petunia and portulaca, should not be covered more than a sixteenth or eighth of an inch, and aster, verbena, and seeds of like size, not more than a quarter of an inch. In sowing the seeds it is well to sow the largest kinds in one end of the frame and the smaller ones in the other, which will make the covering of them to the proper depth easier. After the seeds are all covered, press down the soil quite hard and firm.

After the seeds are covered give them a good watering, using a very fine sprinkler so as not to wash the soil from the seeds. The sash should now be put on, and be kept tightly closed until the plants begin to come up, but if the surface shows the least sign of drying up, it should be watered as often as necessary to prevent it. After the plants are up, the sash should be partly removed in the middle of bright, warm days, and protected from frost at night with boards, or straw if the weather is cold.

The time required for seeds to germinate varies very much; some, like aster and zinnia, germinate in five or six days, in a warm soil, while others require two or three weeks, and some a month or more. Some, like verbena and geranium, are very uneven about germinating, some coming up in two weeks and others make their appearance daily for several weeks or months.

As a cold-frame depends on the sun for heat, it should not be started before April in this latitude; my rule is from the 10th to the 20th of the month. The plants will then be quite large enough to transplant to the open ground as soon as danger from freezing is over. Many persons have good success by sowing seeds in boxes in the house, but it is much easier and less trouble to grow them in frames, and the plants are much more stalky and bear finer flowers.

I now make it a rule to grow everything that will bear transplanting in frames, and find it much the cheapest way, saving much work and seed. Some seeds have a hard, horny coat, like cypress vine, geranium and perennial peas, and must be well soaked in warm water to make them germinate. Canna seeds should have hot water poured on them and be soaked a week in warm water.—*Farm and Home.*

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

THE Hamilton meeting was a grand success. The local attendance was large, and representative men were present from all parts of the Province. Very few changes were made in our Board of Directors, and President McD. Allan has been elected for another year. The appointment of the Summer meeting was left with the Executive. Any applications, therefore, either from town councils, or from our members in any locality, for a meeting to be held in a certain neighborhood, should be sent in to the Secretary.

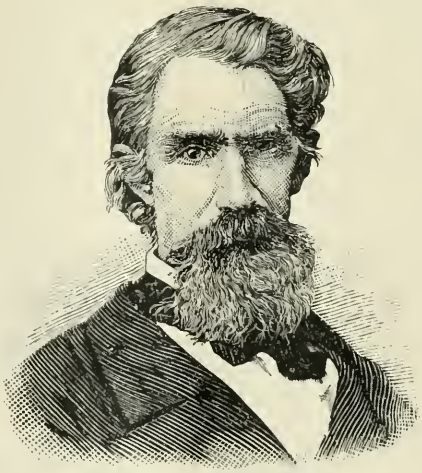

FIG. 29.—DR. J. A. WARDER.

Dr. J. A. Warder.

WHILE we are especially interested in noticing those of our own countrymen who have distinguished themselves in the study and practice of Horticulture, yet we are pleased to acknowledge the debt we owe to such gentlemen as M. P. Wilder, P. Barry, J. J. Thomas, Dr. J. A. Warder, and others of the neighboring Republic, who so worthily bear the title of "Fathers of American Pomology." Three of these gentlemen have already been pourtrayed on these pages, and we now have pleasure in giving place for the fourth. The late Dr. Warder, who was President of the Ohio Pomological Society, and one of the Vice-Presidents of the American Pomological Society, has left us a work in his "Ameri-

can Pomology," which, though published some twenty years ago, is still an authority on most of the subjects of which it treats, and the book is worthy of a place in the library of every fruit grower.

Digging Holes for Tree-Planting.

The following hints from the book above mentioned may be of interest to some of our readers who intend planting on a large scale this Spring:

The next step in the preparation is the digging of the holes for planting the trees. Some persons lay great stress upon the importance of having these made large and deep, which may be very well in a grass lawn with a few trees, but it is a very expensive matter for an orchard of thousands or even hundreds. The holes should be prepared as wide as the field, and as deep as the plow can stir it, as already directed; that is the kind of holes that should be dug; if the land has been prepared in this manner, the opening of the holes and planting the orchard, either deep or shallow, becomes a very simple matter.

Having determined the distance at which the trees shall stand from one another, and the order or plan of planting, flag poles are to set in the line to be occupied by the first row of trees, and a deep furrow is then opened with a large plow, drawn by a pair of steady horses. The poles are moved and set for the next row of trees, and so on, until the whole is laid off, making the furrows as straight as possible. This done, a single horse with a lighter plow is driven across these deep furrows at the proper distance, so that the intersections shall indicate the stations for the trees.

Planting Trees.

While the above plan is commendable in planting a large commercial orchard, yet, for the small orchard in a prominent location, more care should be taken in order that the planting may be above criticism. For this case we would advise the additional precaution of marking out the ground with stakes placed just where the trees are to stand; and when these have been got to range perfectly the planting may proceed. In order to have the tree planted in exactly the same place as the marking stake

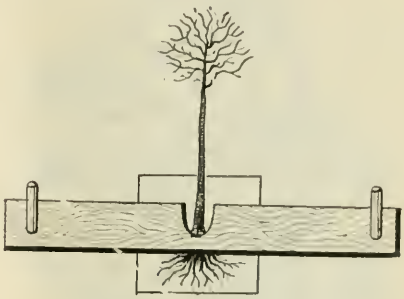

Fig. 30.

stands, the very simple device here shown, which is no new idea, may help some of our readers just at this season. It is simply an inch board about six inches wide and about four feet long, with a hole in each end and a notch in the centre. The board is placed so that the notch takes in the marking stake, and a pin is then driven in each end. The board and the stake are then removed without disturbing the pins while the hole is being dug, after which the board is replaced on the pins, and the tree set in the notch as shown in the engraving. Carefully keep the tree in position by means of this board, until the earth is firmly packed around the roots, when its help may be dispensed with, and the tree will be found to occupy exactly

the same position as that occupied by the marking stake.

Glory of the Snow.

We are so pleased with the beauty of this flower, just now (March 5th), in full bloom in one of our windows, that we desire to draw the attention of our readers to it. Its technical name is *Chionodoxa Lucilia*, and its

Fig. 31.

general appearance is well shown in the engraving. The flower stalk with its racemose flowers, grows about nine inches high, and the flowers, five in number on our plants, are sky-blue on the apex of the petals, gradually shading off into pure white toward the base, while the yellow anthers are curiously attached to white strap-shaped filaments.

It is claimed for this plant that it is quite hardy, and will grow in any ordinary border where the soil is not too wet or too heavy. It blooms very early in the season, with the Crocus and the Snowdrop, whence it derives its common name; and truly a bed of gold and silver crocuses, white snowdrops and blue glories would be a most attractive feature upon a lawn so soon after old Winter has released his icy grip upon us.

That this flower is little known as yet is explained by the fact that it is only about twelve years since its first introduction.

Vegetables for the Kitchen.

Mr. Wm. Falconer, of Queen's, L. I., recommends the following vegetables as the best of their kinds:—*Beans*: Snap, Mohawk and Valentine; Pole, red-flowering scarlet runners for their blossoms. Lima, for shelled beans, variety Dreer's Improved. *Beets*: Eclipse and long smooth Blood. *Cabbage*: Early Jersey Wakefield, Early Summer and Drumhead Savoy. *Cauliflower*: the various strains of Expert. *Carrots*: Early Scarlet Horn, Half Long stump-rooted. *Celery*: White Plume, Golden Heart, London Red. *Cucumber*: Nichols, and Tailby's. *Corn*: Cory, Concord, Stowell. *Egg Plant*: New York Improved. *Lettuce*: Boston Market, Salamander. *Mushrooms*: English Gray. *Onions*: Yellow Danvers, Large Red Weathersfield, and Southport White Globe. *Peas*: Improved Daniêld O'Rourke, Alpha, Champion of England, Bliss Abundance. *Radishes*: French Breakfast, Scarlet Turnip, and of the long-rooted, Wood's Early Frame. *Rhubarb*: Monarch, Victoria. *Squash*:

Bush Summer Crook neck, Pine apple, Hubbard. *Tomatoes*: Acme, Trophy. *Turnips*: Red-top, Strap Leaf, Purple-top, White Globe.

A New Tomato.

Mr. S. H. Mitchell, a subscriber in St. Mary's, and the originator of the Canada Victor tomato, writes that he has been in the gardening business for twenty-eight years and has made a specialty of tomatoes. He has now another new tomato which he intends introducing next year, called the No. 1. It is described as having strong, growing, healthy, half-dwarf vines, *early*, an immense bearer; fruit, a beautiful, clear, bright red color, uniform in shape, color and size, has no black spots, weighs 10 to 12 ounces, and is round as the Globe.

The British Apple Market.

It is a poor satisfaction to those of us whose apples were sacrificed in Britain during the glut of last December to find that prices now are advancing. Some of our readers, however, may be fortunate enough to have cellared their Russets, and to them the following note from Williams, Thomas & Co., Liverpool, may be of interest:

Sir,—Arrivals are now coming forward in very moderate quantities, which find eager buyers at advanced rates. We quote: Baldwins, 13s. 3d. to 16s. 3d.; Russets, 12s. 3d. to 22s. 6d.; Spies, 12s. 3d. to 15s. 3d.; Various, 11s. 3d. to 17s. We can recommend shipping, as prices, we are of opinion, will improve with the small shipments. Russets are greatly wanted.

QUESTION DRAWER

Hardy Peaches.

22. Are the new peaches now being introduced from China and Japan any hardier than our old varieties? I see that Prof. Budd says that they are 50 per cent. hardier, and others that they are as hardy as the plum or apple.—H. McKee, Norwich.

We are unable to reply from personal knowledge, not having yet tested them; but you may place confidence in statements made by Prof. Budd. Has any reader tested them?

Geraniums and Fuchsias in Winter.

23. In growing such plants as geraniums, fuchsias, etc., in the house or in a small greenhouse, what temperature is required and how much water?—A Member.

The plants should not be overwatered. The soil would be better a little dry than kept always moist. About twice a week is often enough to water, and then it should be done so thoroughly as to moisten every particle of soil in the pot. The foliage should be syringed daily to remove dust and keep the plants in a healthy condition.

The following list of plants do best in a cool room, or with an average temperature of about 55° Fahr, viz:—Azalea, Daisy, Carnation, Chrysanthemum, Cineraria, Camellia, Geranium, Petunia, Primrose, sweet-scented Violets and Verbenas.

The following list requires a higher temperature, say an average of about 70°, viz:—Abutilon, Begonia, Caladium, Canna, Coleus, Fuschia, Gloxinia, Heliotrope, Lobelia, Tea Rose, Smilax and others.

The Russian Apricot.

24. Sir,—Will you kindly give me your unbiased opinion as to the advisability of planting the Russian Apricot in preference to the English. I have been advised that the "Russian" is the most desirable in all ways, but not knowing it, I take the liberty of applying to you for advice.—R. Wilkinson, Niagara-on-the-Lake.

Any opinion we give in these pages is "unbiased" by any connection with a nursery, as the writer is a fruit grower, and not a nurseryman. Regarding the Russian Apricot, we may say that it is one of those novelties from which much is expected, but little is yet known, especially as to its adaptation to our Canadian climate.

No doubt the English Apricots are superior in quality to the Russian, but so far we have had no success with them, as they are tender, and scarcely a single specimen escapes the curculio. The Russian is, no doubt, much hardier; but in buying we would advise careful examination to see that it is either grown on its own roots or is budded upon the plum, because if budded upon the peach stock the tree would be as tender as the peach. Another important point is the variety. First propagated from the seeds, many of the seedlings were worthless, but recently some of the finest of these have been named and propagated. The value of these is as yet imperfectly known. We have a couple of dozen trees, two years planted, and we hope to be able to report upon the quality of the fruit this Summer. At the meeting of the Western New York Horticultural Society, the fruit was not highly commended; but, as at our own meeting at Hamilton, very few had any personal experience to offer.

We refer our correspondent to an article upon the Russian Apricot in this number, from the pen of Mr. D. W. Beadle, Esq.

Sowing Palms.

(see question 11.)

I have never found that any particular position is necessary for any of the palms usually grown from seed, which, however, must be as fresh as possible. I use six-inch pots, filled one-third full of potsherds for drainage. The soil is a mixture of equal parts peat and loam finely sifted, and a little sand. The seeds can be sown so that they nearly touch each other, and covered with a half inch or so of soil, depending on the size of the seed. The surface is pressed smooth and firm, and the pots plunged up to the rim in a warm house, with bottom heat. Keep the soil moist, but not over wet. Such kinds as the Cocas, Latania Berbonica, Areca Lutescens, etc., require several months before the plants show themselves. Leave the young plants until they are thoroughly rooted and the tops well up before potting them off; the last named and the Kentias should show the second leaf before potting. I like the long, narrow rose pots, because of the long, stiff roots that the seedlings have. Until thoroughly established, the young plants are given the same treatment as the seedlings required. —E. E. Summey, La Salle, N.Y.

Duchess of Oldenburg.

25. Will the Duchess of Oldenburg apple flourish on the north shore of Lake Superior,

and in Manitoba. I know it does fairly well on the south shore at Marquette, Ishpeming, Calumet, and Eagle River (opposite Thunder Bay), so no doubt it would flourish in some parts of our possessions. Are there other Russian varieties which are hardier?

Will some readers in Manitoba please reply regarding the suitability of the Duchess of Oldenburg. It is a hardy variety, but not generallly supposed to be equal to such varieties as Yellow Transparent and Wealthy in that respect. Mr. O. F. Brand, however, of the Minnesota Experiment Station, says his observations lead him to believe that it is superior in hardiness even to the newly introduced Russians.

Treatment of Large Trees after Transplanting.

26. SIR,—During the month of February I moved a number of large fruit trees, chiefly apples, in bearing, and am at a loss to know how they should be treated during the coming Spring and Summer. In my opinion the information I require will be valuable to your readers in general, and I therefore hope you will kindly devote some of your valuable space to the subject in an early issue.—JOHN FRASER, Petrolia.

It seldom pays to remove bearing fruit trees, as the shock of removal so impairs the vigor that it will be a long time in recovering. Our correspondent has used the wisest plan, in removing the trees in winter with a large frozen ball of earth attached, and if this has been carefully done, and the hole is well filled in and thoroughly packed with fine earth in the Spring, little more remains, except to remove a portion of the top to keep up an equilibrium between it and the roots.

Watering in the hot weather upon the surface is more productive of harm than good, as the surface quickly dries and bakes. If it is necessary to apply water, a few inches of the surface soil should be first removed, and afterward replaced, or the whole surface of an area much greater than that occupied by the roots, covered with a heavy mulch, which would effectually hold the moisture and prevent the hardening of the soil.

We shall be pleased to hear from some of our readers on this subject, if any of them have any experience to offer.

Tar for Borer.

27. I am satisfied I can save my trees from an attack of the borer by applying with a paint brush, tar, or a mixture of tar or rosin, with some cayenne pepper or Paris green. Would the tar or the Paris green injure the tree?—D. YOUNG, Adolphustown.

We think such a remedy would be at the expense of the life of the trees. Tar is an injurious substance when applied to the young bark, as we have found to our cost when using it to prevent the female moth of the Canker Worm from ascending the tree.

Apples for Name.

28. SIR,—With this mail I send you two apples. Will you kindly name them for me? The trees were purchased from Bowman, of Rochester, and are now five years planted; they bear the fruit on short spurs, none growing near tips of branches; trunk medium height, dividing into two branches; head rather flat and inclined to be bushy. They are growing on the farm of Geo. Smith, Medonte township. He did not know the name of them, and as they appear like a good apple, I would like to plant some in the Spring, and you will much oblige if you can give me the proper name.—JOE DUNN, Orillia.

The two samples were duly received and very much admired. As the apple bears no resemblance to any varieties grown in this district, we submitted it to the Fruit Com-

mittee at the Winter Meeting at Hamilton, who reported on it that they judged it to be a seedling of the Snow, and that should it prove to be a new variety it should be watched, and if a good grower and productive, it should be propagated. If you will forward other specimens we will submit them to other pomologists for their opinion.

Bulletin No. 8 of the Botanical Division of the Department of Agriculture has just come to hand, containing among other things an article on the Potato Scab, a list of the Parasitic Fungi of Missouri, and the two following questions and answers, numbered 29 and 30, which interest us as Canadian fruit growers :

Remedies for Apple Scab.

29. I am preparing to spray 1,400 ten-year old apple trees with Paris green and want to add something for the scab. Has sulphate of copper been used for the latter purpose ?—Charles Patterson, Kerksville, Adair county, Mo.

I would suggest the use of liver of sulphur or sulphide of potassium, using the solution of the strength of one-half ounce to the gallon of water. This should be used as soon as prepared, or in other words, it should not be prepared until you are all ready to make the applications.

In regard to the use of sulphate of copper, the strength of the solution which may be used has been determined. The following preparation may be tried experimentally : In two gallons of hot water dissolve two pounds of sulphate of copper (pure) ; in another vessel dissolve two and a half pounds of ordinary carbonate of soda ; mix the two solutions, and when all reaction has ceased add one pint of liquid ammonia ; then dilute to twenty-five or thirty gallons. This is easily applied with a good spraying pump, and adheres strongly to the parts sprayed. Its preventive action lasts for a long time. The action of the liver of sulphur is soon dissipated.

Pear Blight.

30. I send you by to-day's mail some diseased pear cuttings of the La Conte variety. The trees from which the cuttings were taken I set four years ago, being one year old at the time of setting. The trees are on well-drained sandy land, which has been well fertilized with stable manure, cotton-seed meal, and phosphates mixed with a large amount (one bushel to the tree) of well-rotted swamp muck or peat. They have been vigorous up to this year, but within the past month about every twelfth tree on a tract of four acres has manifested the "die back," beginning in the bud, generally of the highest and most vigorous shoot, and gradually extending downward until in a few instances it has reached the root, thus killing the entire tree.—C. H. Franklin, Union Springs, Ala.

Your samples show unmistakable signs of the disease which has come to be generally known as "Pear Blight." This malady is caused by one of the most minute of living organisms—a species of bacterium, named by Professor Burril, the discoverer, Micrococus Amylovorus. They are frequently spoken of collectively as disease-producing germs, and the malady they occasion belongs to the same category of germ diseases now definitely proven to occur among animals and plants. These germs are of extreme tenuity ; they are borne from place to place and from tree to tree by the atmosphere, which is never so quiet but that its movements are sufficient to keep such impalpable bodies afloat. At present we know of no certain means for rendering the trees unsusceptible to

the disease. Fumigation, spraying, or washing the trees with various known fungicides, notably sulphur and lime, have given no positive results. As the disease is local and spreads through the tissue slowly, it is possible, as has long been known, to effectually check its progress by amputation. The smaller limbs should be cut off a foot or two below the lowest manifestation of the disease, and the spots on the trunk and larger limbs should be shaven out, cutting deep enough to remove all discoloration. The instrument for cutting should be kept disinfected with carbolic acid or otherwise, to guard against conveying the disease to freshly cut surfaces. The exposed and newly cut surfaces ought to be at once painted over in order to exclude the germs that might reach through the atmosphere.

Pruning Plums.

31. I have over 100 plum trees planted, some of them one year, some two years, and some three years. They grow two and three feet, and some of them four feet, in one year Is it best to cut last year's growth back one-half, or let it grow as it will? Or would it be better to nip the growth in midsummer?—WILLIAM SWITZER, Kirkton P.O., Ont

Plum trees, as a rule, need very little pruning, except an annual thinning out where the heads are too close. Clipping back, or nipping in midsummer, would cause the production of more numerous side branches.

Cutting Scions.

32. Will scions, taken from a tree that never bore fruit, bear fruit as well as scions taken from a tree that has borne fruit? Please answer in your next issue.—GEO. HANNAFORD, Pevensey, Muskoka.

Yes; and they are generally used by nurserymen.

OPEN LETTERS

The Hamilton Meeting.

SIR,—I am a new member of the Fruit Growers' Association, and I was present at the Hamilton meeting. I now write to express my surprise that the meeting was not crowded with farmers and citizens of the locality. It may be that the public consider it a private meeting of the Association, like that of any other corporation, and of interest to none but those specially in the business. Though no way concerned in nursery or fruit business, except as far as my own grounds extend, I found the whole proceedings both interesting and instructive. The argument ran principally on the export apple trade, in which I am not concerned, and which would not be generally interesting to ladies or amateurs; but at all times I felt that by asking a question quietly on a little slip of paper, I could call out plenty of discussion on any branch of horticulture or floriculture, and hear the subject worked out fully by a dozen speakers who knew all about the business. I do not care to hear long speeches on what might be done in raising fruit, flowers or forests, such as were too frequently given by a certain professor who has lately left the scene, but I do take an interest in a man who can tell promptly what he has done, and knows others can do, in any department. It is a perfect satisfaction to me to hear certain members, in a perfectly unassuming way, tell us all we need to know, both practically and scientifically, on any point to which we call their attention. I think such observing men as Mr. P. C. Dempsey, Mr. A. M. Allan, Prof Saunders, L. Woolverton or E. D. Smith, would make a success of any calling; and what I have heard from them seems worth years of experience to me, and would tend to increase the interest in all branches of horticulture in every one who listens to them

I have a great respect for certain American writers on the same subjects, among them

P. Henderson, Mr. R. Douglas and Mr. W. Falconer, for adhering to their own actual experience, not in an isolated instance, but in years of labor. It will not do for me to say a word till I can speak with the same authority.—A LISTENER.

A New Organization

SIR,—The fruit growers and gardeners of the district of Burlington met on March 1st and organized under the title of "The Burlington Horticultural Association."

The following officers were elected for the current year: President, George E. Fisher; Vice-President, J. S. Freeman; Secretary-Treasurer, A. W. Peart; Directors, Wm. Hopkins, Edwin Peart, Joseph Lindley, Dr. Zimmerman, H. Williams, Charles Davidson and Frederick Freeburn; Executive Committee, Joseph Lindley, Dr. Zimmerman and Chas. Davidson; Auditors, W. G. Pettit, P. Ernest Kerns.

At a meeting held March 12th, an excellent paper on "The Cultivation of Strawberries" was given by Mr. John Gray, of Burlington. The subject was thoroughly discussed by the members, many valuable ideas and suggestions being brought to the surface.—A. W. PEART, Secretary.

Room in England for Canadian Apples

A SUBSCRIBER to our journal living near London, England, writes:—

"As for our supply this year of American apples, I read in Canadian papers, particularly in the columns of the Toronto "Globe," that your fruit growers are all complaining of bad returns for their crops, which were abundant in quantity. They say that their markets both in the North-west of Canada and in Great Britain were glutted and the prices run down before they could reap them, by their earlier neighbors of the United States. So that it would appear that while they are suffering from the low prices obtained for their fruit, we here are revelling in the enjoyment of the abundance of apples at very small expense. Now as far as the London market is concerned, this is not the case. No one in London knows that apples are more plentiful or cheaper than usual, but on the contrary, prices are higher than for several years back, and I think it must be obvious that high prices and over-supply cannot co-exist. In my own experience, my supply from my garden being exhausted, I bought a barrel of American Baldwins at the general store where I usually purchase household necessaries. I could not get them under 21s., their price for the same apple last year, and the year before having been 18s. They had no cheaper apple, as they did not keep inferior kinds, but they had others up to 25s. The Baldwins satisfied me, as I had had them before, and they assured me I could depend on their turning out well. They certainly did so, for I found them to be alike all through the barrel and in perfect condition.

I can believe it possible that they may be somewhat cheaper in Liverpool, but cannot believe the market to be over-stocked, as holders would relieve themselves by sending them to London or elsewhere. I know from the report of friends in Scotland that they are plentiful and comparatively cheap at Glasgow. They say they can get very fair American apples there for 1d. per pound, equal to, I believe, 14s. or 15s. a barrel, but not so good, I am sure, as the Baldwins in London at 21s. The larger supply I account for by the fact that freights on your side to Glasgow usually rule lower than to Liverpool or London, and shippers are tempted to believe that the saving in freight will be pure gain to them. This, however, is quite a mistake, as Glasgow is comparatively a small market, while it is too far away to re-ship to London, decidedly the best market of all. Glasgow, although a large city, has only one-tenth the population of London, and its market is limited or nearly so to the southern half of Scotland, while all Scotland does not contain as many people as may be found within the easiest possible reach within a ten-mile circuit round Charing Cross!"

Trees and Plants Tested at Ottawa

SIR,—As it may be of interest to intending planters in this section of Ontario to know what success has attended the distribution of plants by our association in this locality, it affords me pleasure to hand in the following notes:—

1873. GRIMES GOLDEN apple survived several years and fruited well, but at length fell a victim to the borers and the cold.

1874. The Downing Gooseberry did fairly well. It is not so prolific as the Houghton or so large a berry as "Smith's," requires to be grown in partial shade, as the sun not infrequently scorches the berries before ripe The Conn gooseberry is still the best here.

SALEM GRAPE one of the first quality, but subject to rot and mildew in some localities, and for that reason is of doubtful value as a market variety. No amateur should be without it.

1875. SWAZIE POMME GRISE APPLE still alive; stands by a board fence where the hot sun does not strike the trunk. It bears a few apples every year.

FLEMISH BEAUTY PEAR. This is the hardiest of all the pears, but this tree only lingered a couple of years and was gone.

1876. GLASS SEEDLING PLUM. Tree quite hardy, but fruit spurs tender; have had as

much as a quart of fruit sometimes off this tree, but it is not a success here. Northern people should plant Pond's Seedling, which is hardier.

1877. DIADEM RASPBERRY has been removed, the Cuthbert proving so much better.

1878. BURNET GRAPE. This hybrid grape of P. C. Dempsey's, of Albury, has done remarkably well and is to my taste one of our first quality grapes. It partakes much of the flavor of the Hamburg class, of which it is the offspring. The small berries in the bunches detract somewhat from its appearance.

1879. ARNOLD'S ONTARIO APPLE lives for a few years and produces several crops, but the effort of maternity appears to weaken the vitality of plant life, and it departed to its long home several years ago; I trust to refresh its originator.

1880. SAUNDERS' SEEDLING RASPBERRY. There were some fifteen of these seedlings. The one I obtained was not one of the best, it made an excellent canning variety. It has now disappeared.

1881. DEMPSEY POTATO was dry and nut-like in flavor, but the tubers did not expand to any great extent. It was therefore not a success and was allowed to drop out of sight.

P. E. BUCKE, OTTAWA.

The Wonderful Peach.

SIR,—One of the things in the way of fruits that has been wanted for a long time is a large, handsome, reliable, yellow peach ripening late in the season, after Crawford's Late and other varieties of similar character have disappeared. In the Chairs' Choice, which made its appearance a few years ago, it was thought the long-looked for boon had been found; but experience proves that while it is a handsome peach, excellent in quality and generally productive, it ripens very shortly after Crawford's Late and not with or after the old Smock, as claimed. In Beer's Smock, the old Smock Free and Salway, we have varieties that are prolific and reliable in trees, but all lack in a great degree the desired size and beauty. It therefore has remained for New Jersey, the home of the peach, where such varieties originated as Crawford's Early, Crawford's Late, Oldmixon Free, Stump the World, Mt. Rose, Beer's Smock, etc., now the most popular of all varieties of peaches, to produce also the Wonderful, which it would seem possesses every point desired united in one variety.

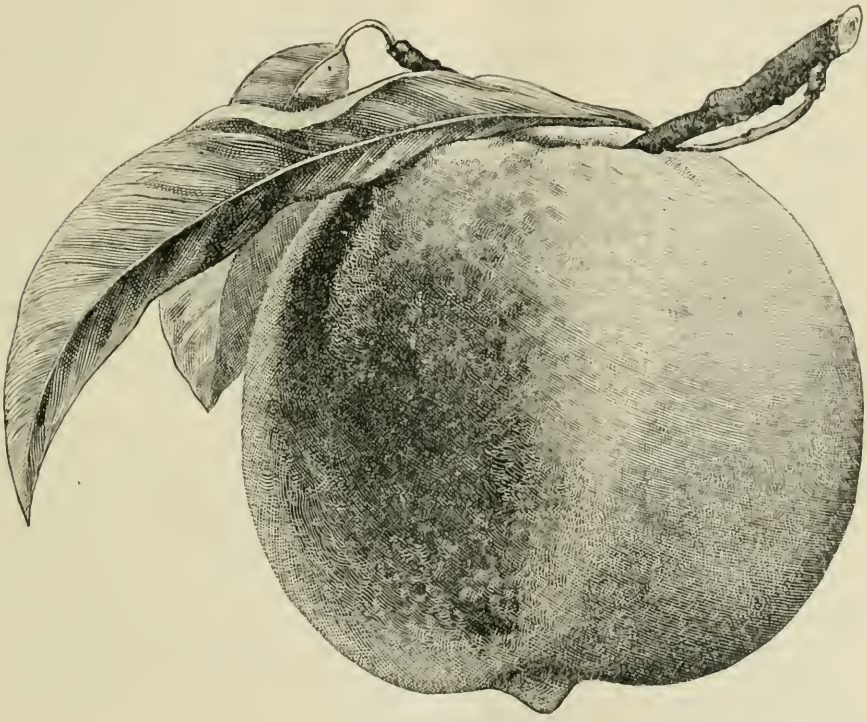

FIG. 32.—THE WONDERFUL.

In season it is among the latest (ripening quite as late as the Smock), of largest size, excellent quality, a regular and most prolific

bearer, and in beauty excelled by no other peach, the Crawfords themselves not excepted; being rich golden yellow, with carmine cheek. The fruit is of good form, as shown in the engraving, of regular shape, and, unlike other late, yellow peaches, is not excessively fuzzy. The flesh is exceptionally firm, deep yellow and bright red at the stone rendering it especially valuable for canning and evaporating.

A peculiarity of the variety is its inherent vigor, the foliage being very abundant, large, of exceedingly deep, almost black green, and remains on the trees until the ground has frozen and long after the leaves have fallen from all other varieties.—J. T. LOVETT, Little Silver, N.J.

Kerosene Emulsion—Spraying Plums etc.

SIR,—You will have to pardon me for being so long in getting that formula from Professor Cook, but I have just received his reply, and it is as follows:—One quart of soft-soap, two quarts of water, one pint of kerosene oil; heat and stir till permanently mixed, and then add water until the proportion of kerosene shall be one to fifteen. Put on with a fine spray. This you will remember is for the aphis on plants or trees.

He says that he don't understand why Prof. Saunders should have found so much difference in the strength of London purple. He has always found it satisfactory, much more so than Paris green.

In relation to the curculio, he says that it does eat and gets poisoned, but it would be time thrown away to put it on before blooming.—L. B. RICE, Port Huron, Mich.

Fruit at Brussels.

SIR,—Your card came duly to hand, and also the six copies of the December number of THE HORTICULTURIST, for which accept our thanks.

Enclosed I forward to you three renewal subscriptions.

The season has been unusually severe on fruit growing. The winter's hard frost, and the heat, with dry weather in the summer, were against good crops of small fruit. But one thing much in favor was the open or free state of the soil peculiar to the last season.

We tried winter protection for our raspberries, and it proved quite a success. We laid the bushes down and covered some with earth, and others with manure, using some sods to keep the bushes down. They turned out finely and lively in the spring, and bore a fair crop of fruit; while some that we left standing were dead down to near the ground, and bore hardly any fruit.

Our strawberries were a middling crop, but good in quality; very few gooseberries, but good; currants were a fair crop and good; there were very few grapes, the vines grew well in the latter part of the season; cherries were a small crop; plums, hardly any; while apples were abundant.

The past season has taught us the need of winter protection, with good cultivation, in order to fruitfulness.

Hoping you will succeed in your good work, and that we may be favored with a good season.—SAMUEL FEAR, Brussels, Ont.

Fruit Trees for Simcoe County.

SIR,—I am very pleased with the improvements you have made. I have just sent an order for apple trees and I consider that the information I have received from THE HORTICULTURIST was worth many dollars to me in drawing up that order. I send you a list of fruit trees that do best in this locality so far as tested, which may be of use to others in low-lying, cold sections:

APPLES—Astracan Red, Duchess of Oldenburg, Alexander, Ben Davis, A.G. Russet, Talman Sweet. All the above list have proven healthy and hardy. The Wealthy has not been fully tested.

PLUMS—Lombard, Yellow Egg, and Common Blue, none of which have proven to be hardy.

PEARS—The Flemish Beauty is the only pear that will do anything here, and it is not entirely hardy.

CHERRIES—I believe this is a good district for cherries; the Early Richmond and Common Red thrive splendidly, and very little black-knot.

GRAPES—The Clinton and Delaware do well. Concord rarely ripens here. The Delaware is by far the best grape to grow in this region; it has never failed to ripen with me and the quality is so good. All small fruits do well. The interest in horticulture is gradually increasing, and I look forward to the time when there will be a good orchard and garden on every farm. We have a fine country, and I have no doubt, through the noble work of the Fruit Growers' Association, every locality in Ontario will find varieties of trees that will be healthy and productive.—FRED. FOYSTON, Minesing, Co. of Simcoe.

Fay and Industry.

FAY'S currant is very fine and a good bearer. I find the Industry gooseberry all that one could wish in a dark berry; splendid to eat off the bush when ripe.—W. S. SHORT, 722 York Street, London, Ont.

The Jessie Strawberry.

SIR,—Although only two of the three Jessie Strawberry plants received last spring survived, yet from these two I now have one hundred and forty-four well rooted plants! Can any of your subscribers beat this?—JOHN KILLAM, North Kingston, N.S

THE

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THE DUCHESS OF OLDENBURG.

NO apology is needed for calling the especial attention of all readers of this journal to this peerless Summer apple, which is a favorite in the cold north on account of its extreme hardiness, and in the southern parts of Ontario on account of its beauty.

The Duchess of Oldenburg is of undoubted Russian origin and of all the importations from that country up to the present it is perhaps the best. The first mention of the apple is found in the records of the Royal Horticultural Society of England, in the year 1824, under the name of Borovitsky, a modification of Borovinca, the generic name of the family, with the statement that it was sent to the society from the Taurida gardens, near St. Petersburg, in that year. In the year 1828 an illustration of the fruit appeared in "Lindley's British Fruits," highly commending it as a Summer apple, together with another Russian apple, the Sugar Loaf Pippin. Now it is widely distributed, and everywhere valued.

The tree is a vigorous grower, forming a well-shaped head that requires very little pruning, and is an early and abundant bearer.

The fruit is described by Downing: "Medium size, regularly formed, roundish oblate. Skin smooth, finely washed and streaked on a yellow or golden ground. Calyx pretty large and nearly closed, set in a wide even hollow. It has a faint blue bloom. The flesh is juicy, slightly sub-acid."

With respect to the hardiness of this apple the evidence is constantly accumulating, until it has become a habit to say "as hardy as the Duchess." In the thirteenth annual report of the Montreal Horticultural Society, the Duchess receives very high commendation in this respect. Mr. R. W. Shepherd, a prominent member, says that it was the only variety in his orchard which has escaped the splitting and dying of the bark upon the trunk. He places it first in his list of apples for profit in that province, and in reply to Mr. Fisk, who ranked it second to the well known Fameuse for market, he said that it brings him a higher price per barrel than the Fameuse, and though the yield is less, it brings him fewer seconds, indeed scarcely any. It also begins to bear much earlier, often the second year after planting, while the Fameuse yields

no fruit until it is out eight or ten years. There is also an advantage in the time they come into the market, viz: early in September, when apples are in demand and there is no glut to contend with. As it does not become so large a tree as the Fameuse, it may be planted closer; Mr. Shepherd would plant them 15 feet apart, and remove the alternates if it should become necessary.

He names the Duchess, Fameuse and Wealthy as the three best apples for profit, and to keep up a fair succession.

Reports from the most northern apple orchards in the province of Quebec agree with Mr. Shepherd in awarding the first place to the Duchess.

Mr. J. M. Fisk, of Abbotsford, P.Q. divides the apples best suited for that province into three classes, according to their degrees of hardiness thus:

(1) Duchess, Tetofsky and Alexander.

(2) Wealthy, Haas, Peach and Winter St. Lawrence.

(3) Fameuse, Golden Russet, St. Lawrence and Canada Baldwin.

He says what is most wanted in the cold north is a winter apple of similar excellent characteristics to the Duchess, and suggests a cross between it and Northern Spy as being a possible success.

In Minnesota the Duchess is also placed at the top of the list and Mr. O. F. Brand says there is in that state a seedling of the Duchess, twenty years of age, and now fourteen years bearing, of which the fruit is number one, and a Winter apple. It is called the "Peerless," and the tree bore nine bushels in 1884 and nearly eleven bushels in 1886. Since that time it has been so badly cut for scions that it has borne very little. He adds "Yes; the road to lasting success is along the line of the Duchess seedlings."

From northern Vermont we have the testimony of Dr. Hoskins of Newport, who says he finds the Duchess, Switzer and Tetofsky unharmed by the worst winters, while the Alexander, Wealthy and Red Astrachan are often seriously injured.

From Wisconsin we have the testimony of the report of the State Horticultural Society, in which we find a list of seven varieties best adapted to that state for hardiness, productiveness and quality, and the Duchess stands at the head.

The market value of this apple is also a great point in its favor. We, in southern Ontario, find that, as soon as the Duchess comes in, even the showy Red Astracan must take a second place both in Toronto and Montreal markets, often bringing 75c. per basket; while in New York city it brings as high a price as the Gravenstein, an apple of better quality.

Dr. Hoskins finds that by gathering the finest colored Duchess of Oldenburgs, and keeping them a while on shelves in the cellar, they ripen much better than upon the trees, and are in prime condition for market.

A FEW HINTS ON LANDSCAPE GARDENING.—IV.

THE distance from the main road at which a house is to be built should be governed by its size and by the extent of the grounds by which it is surrounded. Similar considerations also govern the disposal of the approach, or carriage drive, by which access is had to it from the main road, and both these considerations are too often entirely lost sight of by those who plan their own grounds.

Manifestly in the case of small village and city lots it would be in poor taste to attempt to introduce those curves in walks and drives which grace the park-like surroundings of an elegant country seat; and, indeed, in most such cases the straight lines are the most suitable because most economical of space, and encroaching least upon the precious green sward.

Unfortunately, many a fine mansion, owing to a lack of taste on the part of the owner, is built so near to the road that no opportunity is left for the beautiful in the arrangement of the grounds, and the house itself appears to the greatest disadvantage; and all this notwithstanding the possession of broad acres which the wealthy proprietor might have drawn upon to extend his house grounds. Where, however, they are admissible, gentle curves in the walks and drives are more in keeping with our modern ideas of taste than the straight lines, and the stiff geometric style of gardening of the ancients. Our model is nature itself, in which we see the curve predominates, and the trees and shrubs are not in straight lines, but grouped in ever varying shapes and forms. In such a case, then, the disposal of the approach is a study, and should be made to enter the grounds amid dense groups of forest trees and shrubs, so arranged as to conceal the house itself until the best point of view is reached, after which there should be little to attract the eye away from this object. But though curves are desirable they should not be introduced too freely or without at least some apparent reason; as, for instance, a group of shrubbery, a large tree, or perhaps an elevation, about which an easy ascent is desirable.

It is recommended that the entrance from the public road be not too abrupt, but at an easy angle, so as to give the approach as much importance as possible. It is also important that the carriage way should not skirt the boundary too closely, for that would betray the limit of the estate, and impart a sense of confinement, which is not in good taste; indeed, all such division lines should be concealed from view as much as possible, not by stiff, formal rows of evergreens or other trees, but by groups so aranged as to conceal objectionable features when viewed in passing, or from the windows of the house. And just here another important point should not be overlooked, viz., that these clumps of trees and shrubs be also so disposed as to leave open to view,

especially from the side and front windows, any distant scenes which are interesting to look upon, and with this object imaginary lines should be drawn across the lawn, along which nothing should be planted which would obstruct the view.

Probably nothing in our country so offends the eye of the cultured foreigner as our picket fences, or "palings," as he calls them, and certainly when one considers them, even when painted up in the most suitable colors, they are a blot upon our landscape, tiring the eye with stiff formal lines of wood. Neither is there the same excuse for their employment as formerly, for the introduction of wire fences has enabled us, by using a neatly turned post, to put up a fence where it is needed that will be almost invisible.

The drive is an extension of the approach which can be used to great advantage by our wealthy farmers, whose well cultivated fields and beautiful orchards invite the attention of the visitor. A drive-way of such a kind need not be kept with such scrupulous care as the approach, with its even edge of closely shaven sod, but may be itself a strip of green sward, just large enough to be easily kept cut with the mowing machine, and along it may be planted choice specimens of plants, trees and vines. It may be planned to lead through the most attractive portions of the farm, and will prove, according to the experience of the writer, both a delightful walk and a charming drive, much preferred by every

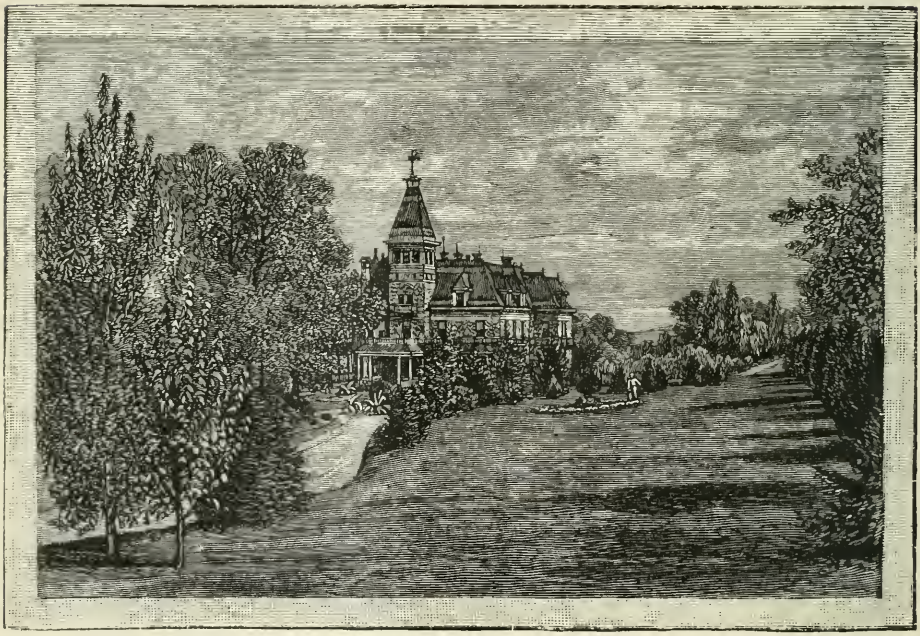

Fig. 33.

member of the family to the public road.

On a closely shaven lawn we see little need of cutting walks, for by them the cost of caretaking is largely increased, and, if overdone, they are rather a blot than an ornament to the landscape. Still, when leading to a much frequented spot, as to a flower-garden,or to a retired summer-house, or to an attractive promenade, it is in good taste to lay out a walk, curving about real or artfully placed obstacles in such a manner as to bring into view the most attractive features of the grounds in graceful succession.

In the accompanying illustration (fig. 33), some of these principles are well worked out. The elegant mansion is situated far back from the main road, and well concealed from the entrance by a curved approach, until a favorable point of view is reached. To the right there is a sudden descent into a beautiful park, which is not shown in the engraving, while to the left and in the rear all boundaries are well concealed by a tasteful disposition of trees and shrubs.

By a little attention to such points as these our readers, who have some natural ability in the way of design, may have the pleasure of planning out their own home surroundings in such a way as to be almost above criticism, for even the professional gardener must admit that to form all plans upon any one model would be an unpardonable blunder on his part.

ARRANGEMENT OF FLOWERS IN A BED.

By J. Hoyes Panton, M.A., Prof. of Botany, Agricultural College, Guelph.

As Spring approaches those interested in flowers begin to think of gardening operations. It is a pleasant thing to notice among other signs of progress in our country that taste is developing, and that this is manifesting itself among our people in a greater love for flowers. Homes that a few years ago were without a flower garden are now found centres of attraction to those who love to look upon the beauty shown in a flower. In the house the windows are adorned, and outside the eye dwells upon attractive flower-beds that indicate the refinement and taste of those who work among them. With a view to encourage this desire for the development of the higher faculties of our nature, I purpose giving a few notes on the arrangement of flowers, which, if followed, will improve the effect in many cases.

1. FORMS OF BEDS.

I need say little upon this. It is a matter of suiting one's own taste as to the shape most pleasing to the eye: circular, rectangular, square, diamond, star or other form. However, a variety always has good effect.

2. METHODS OF BEDDING.

There are four principal methods:

(*a*) Mass bedding, where all the flowers in one bed are of the same kind. In the case of such plants as Portulacca this is very effective.

(*b*) Ribbon bedding, where the plants are arranged in lines; each line made up of plants of the same kind, *e.g.*, a line of geraniums, beside it a line of the coleus, etc.

(*c*) Carpet bedding, where the plants are arranged according to some pattern. This pattern may be simple or complicated. A simple arrangement is diamond in the centre; this will be made up with plants of one kind; bordering, it may be, triangles, each with different flowers. Any pattern may be followed and rendered very attractive by the selection of proper flowers which must be chosen with regard to color and size.

(*d*) Promiscuous bedding, where a great variety of flowers are used in one bed. Great care requires to be exercised in order to make this method effective; both color and size of flower are of importance here. This method of bedding may be called the common one, but in a great many cases it consists merely of a number of plants put in the bed without any reference to habit, size or color.

Arrangement of flowers with reference to size: In circular beds the high flowers should occupy the centre, and the lowest the borders, filling up with flowers, which, as far as possible, form a regular slope from the lowest to the highest. In a bed of this kind the flowers may be arranged in a series of circles; the border very low, and each successive circle with higher plants until the centre is reached. This may be occupied by a single plant which is higher than any of the others. If each circle contains plants of the same kind, and these circles are arranged with reference to the color of the flowers in them, the effect is very striking. In other shapes the idea of arranging according to size should always be considered.

Arrangement with reference to color: The effect of flowers is often lost on account of there being no attention paid to the matching of colors; color has its effect in a garden as well as on a lady's bonnet. Attention to the following combinations may prove of use to those who desire to give more attention to this matter:

1. Blue, red and yellow, usually called primary colors, should not be too near each other.

2. Yellow and violet, red and green, blue and orange, contrast favorably.

3. Violet and orange, violet and green, also contrast well. In this case you have composite colors contrasted, and not simple as in preceding.

4. Red and orange, red and violet, blue and violet, green and blue, form poor contrasts; but if the simple color is in small proportion the result is greatly improved. Red, blue and yellow are what we term simple colors. Violet, orange and green are composite; violet being composed of red and blue; green, of blue and yellow; orange, red and yellow.

5. All colors, simple or compound, are improved near white, consequently the introduction of white between colors has a good effect.

PLUMS.

By Geo. W. Cline, Winona, President Grimsby Fruit Growers' Association.

THE planting and growing of plums seems to be in the minds of a great many fruit growers at the present time, all anxious to know the best kinds to plant for profit, the best mode of cultivation and manures to use. I will try and give you this in as few words as possible.

The Soil, best adapted for plums is a clay loam or an alluvial soil, but plums will do fairly well on a heavy clay by first-class cultivation. On a sandy soil they are not likely to do well without a clay subsoil quite near the top; besides the curculio is very much worse in a sandy soil because it is much easier for them to burrow in it and hide themselves. A plum orchard should have the best of cultivation, especially as soon as the trees commence to bear crops, because this is very exhausting on the soil of moisture, while cultivation and manure help to bring the fruit to perfection. Of course all soils should be well drained, either naturally or by tile drains before planting, as the plum tree will not stand and thrive in wet ground. The manures best adapted to the plum are those with a great amount of potash and phosphoric acid, together with an occasional light coating of barnyard manure and a light dressing of salt. I have also found that sulphate of iron is a good manure, giving the leaves a very dark and glossy appearance and the fruit a very high color. Cultivation is very necessary in preserving the crop in time of drought as the plum tree at that time is very apt to drop its leaves, and the crop to wither and come to nothing. Cultivation will also help to drive away the curculio, as the little Turk does not like to be disturbed as he burrows in the ground in the day time, but it should not be forgotten that cultivation should not be deep, indeed all cultivation in our orchards and vineyards should be shallow, not over three inches deep. As to

KINDS OF PLUMS

for planting the list may be long or short, just as the planter likes. The varieties are numerous that are profitable for this section, but the following list is long enough and good enough for anyone, and the trees can be easily and cheaply purchased, viz :— For *Early* : Imperial Gage, Smith's Orleans, Washington, Niagara and Bradshaw. *Medium* : Lombard, Gen. Hand, Pond's Seedling, and Yellow Egg. *Late*: Quackenbos, German Prune, Reine Claude de Bavay, and Coe's Golden Drop. There are others I would add but they are not so easily got, such as Victoria, Columbia, Lawson's Golden Gage, Duanes' Purple, Glass' Seedling, Munroe, and several others, but we have here plenty from which to select and it is very doubtful if we ever will get any addition to these that will be any more productive or any more profitable for the grower.

In spraying, I watch very closely for the curculios about the time the blossom drops, and have found that it does not always pay to wait to

find them, as they come very suddenly with the warm weather, and in one hot day and night may sting the lion's share. They generally commence on the pears, such as Bartlett, Louise Bonne or Duchess, thence to the cherry and plum. They often almost destroy the pear crop by making the pears very knotty. A great many people do not yet know the cause of their pears and apples being knotty, but the curculio is the cause of all the knots in them as well as of the worms in the cherries; they are also the cause of the holes often found in the different fruits. Now this can all be prevented by applications of Paris green and water at different times during the season, at the rate of 3 oz. of Paris green to 40 gallons of water, kept well mixed and sprayed on the trees. The first application should be made just after the blossoms drop and again at intervals of 6 to 10 days for 4 to 6 weeks according to the weather, dry or rainy, and the number of curculio on hand to be killed.

IN SPRAYING APPLES

I spray twice generally, the first time when they are about the size of my little finger end, then again before the apple turns over to hang down. You will notice the apples, when small, all stand with the blossom end up, ready to catch the poison; and as the codling moth lays its egg in the blossom end, if there is poison there the worm is sure to get it as soon as hatched. Thus the apple is saved and perhaps several other apples, as the worm, when done with one apple, eats its way out and goes into another, and destroys that also. I think another good plan to trap the codling moth is to have a lantern standing in the orchard over a tub of water; the moth flies very freely at night and is attracted by the light, strikes the glass of the lantern, falls into the water and is drowned.

Pears should be sprayed even earlier than plums as the curculio commences on the pear. I do not agree with some of the professors of agricultural colleges as to the amount of Paris green that can be used without hurting the leaves Some of them go as high as one pound to 100 gallons of water; 10 oz. to the 100 gallons make a very strong application, and I do not generally use more than 3 oz. to 40 gallons. The Paris green should be kept well stirred, because if allowed to settle in the barrel it will get strong and burn the leaves. Some brands of Paris green require to be dissolved in very warm water, as they will not dissolve at all in cold water. I do not like those brands as there is plenty to be had that will dissolve and I think them much better.

THE CURCULIO, OR PLUM WEEVIL.

By Simon Roy, Berlin.

FROM present indications it is apparent that the plum crop will be good this coming season, but in order to secure it satisfactorily the curculio must be persistently headed off, or otherwise destroyed. It must be borne in mind that delay in this case is dangerous; before you are aware the greater part of the crop may be damaged. Commence operations immediately, or even before the blossoms fall, as it makes its appearance simultaneously with them, and is ready for operations as soon as the plum is the size of a pea. Prevention being better than cure, I have found that spraying the trees with a weak solution of bitter aloes produced excellent results, thus cheating the instinct of the insect. The smell is not suitable to its tastes, and it will give the tree a wide berth. Jarring or shaking the trees and catching and destroying the insects as they fall upon cloths spread at the base of the trees is an excellent way of getting rid of them, but is only applicable to small sized trees. The best catch is usually in the evening just about sundown. Merely shaking the trees in the evenings is a good plan, as those which fall to the ground are usually devoured by toads in their nightly search for food, which consists principally of coleoptera. The habits of the curculio differ from many of the other beetle family: instead of making its escape by flight it drops, upon the least disturbance, to the ground as if dead, and it evidently does not at all appreciate disturbance, as is evident from the fact that those trees planted in the vicinity of my buildings, where the sparrows are continually flying into and about, rarely drop a plum with a curculio mark on it, no claim being made as to the birds eating the insects. The sparrow is somewhat like the crow—both are omnivorous—having "crops for a corn"; neither object to eating grain when it can be obtained, but will also eat bugs and other animal food in an emergency.

Sprinkling trees with a solution of Paris-green has been advised, but as yet I have never tried the experiment, failing to see the *rationale* of it. Many falsities pertain to both the Medical and the Horticultural profession: often appearances are assumed as realities, when the effects are attributable to something else; perhaps disturbing the insects in the process of spraying has produced the real result.

P.S.—Perhaps it may be as well to remark that in using aloes avoid inhalation of spray on account of its cathartic effects; and not to use it near to dwellings on account of its rather offensive and pungent smell. Personally, I have never experienced any bad effects from the use of it.

NOVELTIES.

The Golden Prolific Gooseberry.

MR. CHARLTON, of Rochester, is the introducer of a new gooseberry with the above attractive title. The accompanying engraving is made from a photograph, and is claimed to be a faithful representation of its size and productiveness.

Mr. Charlton sends us the follow-

ing particulars concerning this new gooseberry :

"This promising new variety is an American seedling of the English type, and was found in 1882 growing in the crotch of a locust tree, in this city, and transplanted to my grounds.

"The seed which produced it was evidently dropped there by a bird. It has passed its probation stage, having fruited the past six years continuously in several localities, and is, without doubt, a decided success.

"It is perfectly hardy, a good grower and unusually free from mildew. Its foliage is a dark, glaucous green, and in a young state its wood is very spiny, being very distinct in this respect. Fruit large, of a deep golden yellow, of excellent quality,

Fig. 34.—The Golden Prolific Gooseberry.

and is very attractive in appearance. It is a heavy fruiter, and I believe is destined to become as popular as the Industry, and, unlike that variety, it can be propagated successfully."

P. C. Reynolds, editor of the *Rural Home*, August 18th, 1888, says: "We found a few bushes showing a good, vigorous growth of wood, and one of them not yet picked, heavily laden with large, yellow fruit of excellent quality. It was singularly free from mildew, although evidently of foreign origin. It occurred to us that it would be a good mate to the Industry, that being red and this yellow."

The Stachys; a New Garden Vegetable.

Noticing in several of our exchanges mention made of a new garden vegetable, which seems to possess considerable merit, we wrote to Mr. Elmer E. Summey, of La Salle, N.Y., for further information. In reply, he writes:

SIR,—I have no tubers or plants of the Stachys for sale, but I send you a sketch of the vegetable, made directly from tubers which are now growing in pots in my window.

I notice in the April *American Garden* that a correspondent reports that the Stachys is growing wild about the Bay of Chaleur, P.Q., and is regarded as a weed. Have you any knowledge of this, or can you gain any? It hardly seems possible *S. tuberifera* could become a weed, or that it would be naturalized in such diverse climates as N. Africa, Florida and Quebec.—ELMER E. SUMMEY.

Mr. Sumney also contributes the ollowing article on this vegetable, heading it

A GARDEN NOVELTY OF MERIT.

Stachys *affinis*, or *tuberifera*, is the botanical name of a novel vegetable which but lately has attracted some attention, first in Europe, then in this country. It is a native of North Africa, but comes to us from Japan, where it is called Choro-Gi. It is allied to the English ornamental Wound wort (*Anthyllis arvensis*), and belongs to the same family as the Coleus, and the sweet-scented herbs, Lavender, Thyme and Mint, but differs from its relatives in that it yields edible tuberous roots.

These roots are formed of ring-like ridges, giving them the appearance of a one-horned caterpillar (see figure), varying in length from one to three inches, and in diameter from one-half to three-fourths of an inch. The skin is thin, smooth and semi-transparent.

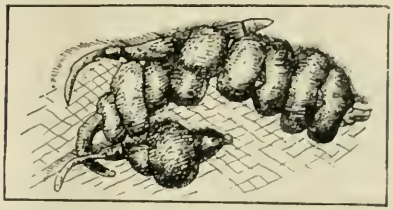

FIG. 35.—THE STACHYS.

This peculiar vegetable requires no more special treatment than do potatoes, and even poorer soil will answer, though, like everything else, the more attention that is given the greater and more satisfactory the result will be. Planted, a single whole tuber, in hills two feet apart each way, a yield of nearly 500 bushels to the acre has been reported, each plant yielding from 200 to 300 tubers, which may be planted like potatoes, though each joint of the stem can be used as a set.

The plant, growing about a foot in height, has a round, bushy habit, having medium sized, oval-shaped leaves, and has many small pink flowers which in themselves are not unattractive.

As for the use of these roots, they probably will never become a staple article for the market like other products, but will tend toward securing more variety for the table in Winter. When pickled alone and properly seasoned, or mixed with small cucumbers, onions, peppers and cauliflower pickles—they are excellent; then again when cooked as vegetable-

oysters, they are delicious; or boiled, mashed and seasoned in the way of the Egg Plant, they become a novel side dish, having a pleasant and somewhat spicy flavor, midway between the Jerusalem Artichoke and boiled Chestnuts. In preparing them, washing only is necessary, as the thin tender skin renders peeling needless.

A point not to be overlooked in favor of their general use and cultivation is that they may be kept as well, as easily and as long as potatoes, requiring only a cool, dry cellar; keeping their fresh appearance best if covered lightly with earth.

A FIRST LESSON IN FORESTRY.

By T. M. Grover, B.A., Peterborough.

SINCE I began to lay out a small plantation of timber trees, and told my friends what I was doing, I found every one interested in the subject, and many made enquiry as to the nature of the seed or seedling trees required, and the mode of working. As I had to teach myself each step in the business, I think I can guide any beginner into a little easier way than I found for myself.

To learn it at a single lesson, I would say to any one who has cultivated land near his home, to send one dollar to some wholesale nursery for a few seedling trees. These nurseries are plentiful in the United States, from New York to Illinois, and they will send you a dozen or fifty or one hundred little trees by mail, of almost any variety, and there is no duty on them (as yet), and no risk of injury in transit. These seedlings, though no larger than a cabbage plant, will endure cold and packing for a long time, and I have heard of ash seedlings kept in a storehouse for three years with safety, They are shipped all winter. These hundred trees are from seed planted last spring, are very small and cannot yet contend with weeds or sod, so they must be planted close together in a row and kept clean, and the better they are cultivated like a vegetable, the more they will grow. Some, like the Ailanthus, Locust or Box Elder, will grow five feet the first season. They will all make a very fair growth.

For further observation keep them cultivated another year or two in the same place, and then move them wherever you like.

The strife with weeds and soils will show what trouble one would have with a whole field like that for a plantation; the style of seedlings, the growth, the season and the care required are just the same, but for field culture with horse power it is better to get two-year-old seedlings, as they are so little more in price, and for any but skilled nurserymen, more easily cultivated.

Any one who would like to have an acre of solid timber, or ten or one hundred acres, and who will give it his personal care, will have no trouble in making the trees grow. There will not be five per cent. loss in transplanting, and the cultivation (not that generally given to lawn or street trees) stimulates such an unexpected growth that the planter will be more than satisfied, in Canada, where planting has not begun yet, and for a small lot it would cost very little to get good sized trees, say four or five feet high, and when planted only four or five feet apart, a block of such trees is very interesting. It is quite unnecessary for any one to trouble himself with tree seed, for although there may be 20,000 seeds in a pound, it is not likely that at the

end of the season an amateur would have more than a few hundred seedlings, which could have been bought with the same money.

Seedling trees are sold at all prices from fifty cents to fifteen dollars a thousand. A thousand will be a small bundle and the freight very little, and when planted would cover nearly half an acre. They can be planted in a cornfield and cared for when the corn is cut; need no pruning but only to be mounded up with earth in the fall to protect from mice, and after three years need no further care except to keep up the fence.

After a man has had this much experience, what more lessons will he need? He will have taught himself; and the only thing more I could tell him would be what varieties of trees to buy and where to get them. Any one who wanted to know more about tree planting could try raising a few walnuts from the nut, or a small plantation of evergreen trees.

But my work did not tend in an easy course to distinct success. In my first lot the seedlings were late in arriving and too small in size, and the field was not clean enough, so shortly I was entirely overrun with weeds. The loss of some trees, little growth of others, and expense of getting it clean again, was discouraging.

The same with my walnuts planted just where the book said, *i.e.*, where they were to grow, as I now know they should not be. Another difficulty I had was from not knowing the varieties of the seedlings by sight and from having too many varieties and too large a number come at once, and then planting in a hurry. The cultivation required is to be fine. They must not be left to be shaded by the weeds and suddenly uncovered by the cultivator.

No land owner need hesitate to plant a timber lot for fear of the expense. Although I have seen an estimate for forty acres of a plantation on the prairie at one hundred dollars per acre, to include cultivation and care for three years, and the charge for plantations by contract in large lots is generally called fifty dollars per acre, yet in our cultivated land, where we will do the supervision and labor ourselves, the whole cost can be got down to five dollars peracre, to be paid for trees alone. I have known box elder seedlings sold at $1.25 per 1,000, ash at $2, cottonwood at $2, locust at $4, and the evergreens at very little more.

As soon as forest plantations are really wanted, I think I have shown that there are no practical difficulties to prevent their being started in Canada, nor are there any reasons to expect a failure of the trees in after years. We are not threatened with insect pests, as the planters in Virginia found themselves after their trees were twelve years old. Destructive storms or unusual seasons will not frighten us. We don't fear a stratum of alkali being found by descending roots and killing off a whole plantation just as it gets valuable, as some in California have suffered.

If we are not ready for plantations, we can safely consider the prospect.

APPLE TREE BORER.

By S. P. Morse, Milton.

THE chief cause of the depredations of this Buprestis is some previous injury to the tree it chooses for attack. The whole family, like the more depraved of human worms, selects its victims not from those that are robust and able to resist, but from the already enfeebled. There is not a trace of the good Samaritan in them.

When the circulation of the sap is slow, as in a tree poorly cultivated, or for any cause, or when a tree, as is too often the case, leans to the east so that the one side is exposed all day long to the vertical rays of the sun, or when a tree is newly set and before its fibres have fairly put their little mouths to the breast of mother earth and consequently the tree is nearly dormant and the sap motionless—the sun cooks or decomposes the sap, kills it as sap. This dead sap is what the borer has a weakness for, and he can't resist the temptation to bore for it, and the wood is killed and saturated by it.

A sure preventive, so far as the agency of the sun is concerned, is to *protect from the sun* by any device not adapted to harbor other insect enemies. The main purpose of these presents, however, is to give a hint respecting *trees recently set*, the proper way to protect which is to drive a stake *six inches or so wide* and of the height of the body of the tree, to shade it from the sun's excessive rays. It will protect the tree from the more violent winds as well. *Tried.*

INSECT ENEMIES.

By Jas. Fletcher, Entomologist, Etc., Gov. Ex. Farms, Ottawa.

THERE are three great evils in Ontario which require immediate attention from fruit growers, and should be seen to during the month of May.

1. The Codling Moth, the caterpillar of which destroys so large a proportion of the apple crop every year.

2. The Plum Curculio, which destroys plums rnd cherries.

For both of these pests simple and cheap remedies are found in thoroughly spraying the trees after the flowers have fallen, with a very weak mixture of paris green and water; 2 oz. to 40 gallons of water.

3. The Black Knot. This is the fungous growth which causes the Black excrescences on the branches of plum and cherry trees. Each of these knots contain myriads of spores capable of reproducing the disease. These mature in the spring and are thrown out by the fungus, and distributed by the wind.

Before the leaves expand, every knot should be cut off and burnt.

ENGLISH AND CANADIAN FORESTRY.

To the Editor of The Canadian Horticulturist.

SIR,—I trust that the present Spring will see a considerable amount of tree-planting done. When travelling last Summer through England and Scotland, nothing was so plainly observable to a Canadian as the fact that the country was well sheltered. Everywhere were hedges, everywhere fine trees along them, every here and there, plantations. Those who owned the land apparently were far from grudging the trees their standing-room, and the result well repaid them. Such crops of wheat, such weight of grass per acre as was there obtained, often doubled or trebled Canadian products. Comparing Canadian with English farming practice, no one could doubt the shelter given had much to do with the fertility of the land. It was a painful contrast to many of our Canadian farms, where

it looks as if the owner had cut every tree from the surface to produce a square expanse of bare earth—as bare, as hard and as unsightly as an Illinois stockyard.

How different this to what a farm should be, with its reserve of forest well-kept, free from the intrusion of cattle, and in good forest condition; its bed deep with leaves; its young trees rising emulous to the height of the old,—ready to replace them when they are cut down for use; its massive wealth of foliage; its pleasant walks, cool and umbrageous in the hottest day; its living springs preserved by trees; its lines of windbreaks opposed to the cutting blasts! Such a farm, so kept, is a place of beauty, a place to live and die in. The other, shaved flat to the surface is a place to toil, to make money, if farming pays, perhaps, but it is never a pleasure to those who inhabit it, if they possess any of the finer sentiments of our nature. It is not always even the best place to make money by farming, for he who has the trees will have the grass crops, he who has the grass crops will have the manure, and he who has the manure will have the wheat.

The new forestry report is now being distributed, and any one desiring it, by sending his address to me, will receive it by mail. It is a pamphlet distributed free yearly by the Ontario Government. There is no price for the book, and no charge for postage. It will be found to contain much information interesting to all who interest themselves in the forest.—R. W. Phipps, 233 *Richmond Street, Toronto, April* 15, 1889.

From Our Exchanges.

Phosphate Meal.

A NEW source of phosphoric acid is phosphate slag. This consists of the slag remaining from the manufacture of steel or pig-iron by the Thomas process. The dephosphorization of the iron takes place by melting the iron with lime in a current of air, whereby the pig-iron, rich in phosphorus, is converted into steel, free from phosphorus. The phosphorus of the pig-iron is thus converted into phosphoric acid, which unites with lime and forms phosphate of lime. The melting mixture of phosphate of lime with the excess of lime and combinations of the iron and manganese, is called Thomas slag. It is finely ground, and it is well spoken of in Europe as a cheap source of phosphoric acid for crops that do not need this element in an immediately available form. Analyses of German phosphate slag and of English slag, made at the Massachusetts experiment station, are as follows:

	German Slag.	*English Slag.*
Water	5.08	0.37
Iron and alumina	15.98	8.55
Total phosphoric acid	21.05	18.91
Lime	53.97	49.22

It is claimed that phosphoric acid can be furnished at less cost in this phosphate meal than in any of our known mineral resources of insoluble phosphoric acid. A few sales of it have been made in the Connecticut valley at $15 per ton. If we reckon the phosphoric acid at two cents per pound, the price put upon insoluble phosphoric acid in rock, the slag analyzed has a valuation of $8.42 and $7.56 per ton respectively. We are glad to see that the Massachusetts station proposes to make some experiments to test the availability of this phosphate and see whether its acid is worth more than two cents per pound. Director Goessmann says of it: "The composition of the slag is peculiar on account of an excess of caustic lime, which favors a breaking up into minute particles when exposed to air and moisture The more finely ground, when exposed to atmospheric influences, the more rapidly a general disintegration ensues. This behaviour tends to diffuse the phosphoric acid and favors absorption by the roots. No previous treatment by acids has been found necessary to secure satisfactory returns when used as a phosphoric acid source for plant growth. On account of the alkaline reaction of the 'phosphate meal' no ammonia salts or organic nitrogen compounds should be used as an admixture for the production of more complete fertilizers. In case nitrogen is to be applied, nitrate of soda is used to furnish the element. Muriate of potash and kainit are recommended as a source of potash." *Ex.*

Our Native Plums.

If, as we are told by DR. GRAY, the European Plum, *Prunus domestica* has its original in the almost inedible sloe, and yet there have been derived from it such a multitude of delicious varieties as we now cultivate, what may not be hoped, as the result of high culture, crossing and selection, from native species like those of the American continent, which, when merely growing wild in thickets along the water-courses, send such waves of rich perfume across the land leeward? It seems to me that in these native Plums we have the easy potentiality of a class of fruits that will give to the "cold north" a two months' supply of fresh fruit which will, in time abolish all regret that the Peach, Nectarine and Apricot are denied to them by a vigorous winter. For it is a fact that our *Prunus Americana* has a range far north of our national boundary, being, in fact, the hardiest of all tree fruits. It is ot the most easy cultivation, and very susceptible of improvement.

If it were not already, in its wild uncultivated state, so good, we should have. unquestionably, long ago, sought to improve it. As it is, we find it nearly everywhere north of the range of *Prunus domestica* produced so abundantly in its season as to be almost destitute of any settled commercial value, which can only be imparted to it by the production of improved sorts, superior in size, beauty and flavor to the too abundant wild products.

For canning or preserving, even these are by many regarded as quite equal to the Peach (as we get it); and, in fact, superior to most of the fruit which reaches us. But nothing is more evident than the easy susceptibility of *Prunus Americana* to rapid improvement—*Vick's Magazine.*

A Nut for Defenders of the Sparrow.

The amount of damage that the English sparrow is capable of inflicting is pretty plainly set forth by Thos. Copsey, Hillsea Farms, Hants, in the *Mark Lane Express.* He says:—In one year—from September, 1886, to March, 1887—when my bird-catcher refused to catch more for fear of the informers, I paid him 4d. per dozen for 494 dozen and 10 sparrows, and this spring I paid him for 198 dozen and six sparrows at 4d. per dozen, £11 11s. besides employing a man with a double-barrel gun to shoot sparrows. We have many fowls, and the plan was to set long troughs to feed the fowls in, so set that from port-holes in a barn he could sweep the troughs with sparrow shot after the fowls had left. They generally were swarming with sparrows, and most charges brought down various nnmbers—from six to twenty-eight. I paid for 250 cartridges, if not over 300. As no account was kept, the number killed is but guess. We will say eight on the average of 250 shots will be 2,000 birds; bird-catchers 693 dozen, equals 8,316; total, 10,316.

My bird-catcher tells me that twenty dozen sparrows ate three gallons of oats or two gallons of wheat daily when he has to keep them a few days.

I have entirely given up growing wheat for years on our home farm. On a five-acre piece of wheat (the last grown in 1882) the ground, when the wheat was reaped, could not be seen for the chaff that the sparrows had billed out. They began to eat in the soft milk, and continued till it was carted when in shocks; by eight o'clock in the morning, from fifty to over one hundred could be counted flying off from one shock. If the sparrow was a friend to farmers, go back fifty years, and it will be found the overseers of every parish that I know of encouraged all the boys to take sparrows, and gave them sixpence per dozen for old sparrows, threepence per dozen for young ones, and twopence per dozen for eggs. I never saw the cornfields damaged much at that time; the money was paid out of the rates.

The boys were afraid to take the eggs, and catchers were afraid to catch them in breeding-time, so that they accumulated tenfold till the war had to be opened afresh, and thousands of guns are dealing destruction to the sparrows; all round our stack-yards the wounded groan, and cats get fat killing and eating the wounded. What an unkind set of people these wild bird preservers are to cause the increase for so cruel an end!

Friends of the Farmer.

It may be an advantage to point out some of the friends of the farmer, which, consequently, no farmer should destroy or allow to be destroyed. Among these are toads, which are, under all circumstances, the farmer's friend; moles and field mice, probably, do a vast deal more of good than harm; all birds, especially robins, wrens, thrushes, orioles, cuckoos, phebes, blue birds, woodpeckers, swallows and cat birds. The destruction of all these and many others, except for scientific purposes, should be made, under very heavy penalties, illegal in every State.

The house sparrow, known better as the English sparrow, is to be rated an exception. This bird is now universally regarded as a nuisance, first, because of its grain and vegetable destroying propensities; secondly, because it drives away insect-destroying birds.

Among insects, many wasps are friends, especially those with a more or less protruding horn or sting at the end of the abdomen. Lady-bugs and lace-wing flies live entirely upon destructive insects, especially plant lice and Scale insects, and should never be destroyed. Dragon flies, or devil's darning-needles, are also useful as well as harmless.—*Bulletin 46, New Jersey. A. C. E. S.*

The Merits of Various Strawberries.

From experience here in Connecticut, correspondence with leading fruit growers in every state in the Union and Canada, as well as from personal observation in fourteen of the Western states duirng the fruiting season, I would classify the leading varieties as follows:—

The most productive—Pineapple, Hampden, Lida, Bubach, Windsor, Crescent, Jessie, Manchester and Warfield.

Largest Berries—Jessie, Bomba, Jewell, Prince Logan, Ontario, Sharpless, Bubach, Belmont, Mammoth.

The best flavored berries—Prince, Gold, Miner, Belmont, Summit, Downing, Kentucky.

The earliest to ripen—May King, Iron Clad, Crescent, Parry, Lida, Warfield, Monmouth, Bubach, Hampden, Wilson.

The latest to ripen—Ohio, Kentucky, Windsor, Gandy, Manchester.

Best for light soil—Crescent, May King, Kentucky, Bubach, Miner, Downing.

Best for heavy clay soil—Jewell, Sharpless, Belmont, Logan, Jessie.

This classification is not given as an ironclad rule to follow, but is general in its scope and each family will vary it somewhat to suit their own tastes and local conditions. It can, however, be used as a partial guide to assist in pointing out the way to a proper selection, either for home use or market.—J. H. Hale in *Hartford Courant.*

Potting Plants.

Mrs. Thompson, in *Popular Gardening*, says: A florist once gave me this rule for making up potting soil: one part sand, two parts well rotted cow manure, two parts garden or vegetable mould, and following these directions I have had marvelous success. While it is not agreed with all that drainage is essential with pot plants, yet my best success came from a liberal use of same.

Liquid manure is one of the right hand measures to a vigorous and thrifty growth of plants; strong enough to color the water and applied regularly once a week, the result will astonish you. I have also used, as cleaner and less objectionable, a weak solution of ammonia.

I think in geraniums I had my poorest luck; I have read of and occasionally seen plants covered with blooms, but I never had the joy of possessing them. My plants made vigorous growth, but rarely had over three clusters of blooms, sometimes not that. I knew I fed them and tended them faithfully, but no blooms, whilst my friends, whom in my conceit I thought I could teach how to grow plants, often surpassed me with these.

I came to learn after a long while that small pots and plants root bound were the best for bloom. I have often bought a geranium growing in a rusty, dirty tomato or peach can, and carefully transplanted it into what I considered far better soil and quarters, but which as a rule ceased to be a thing to be desired, though with the scented geraniums I always succeeded.

The Home Garden.

Every farmer should devote half an acre or more to small fruit. He

will find a home market taking every day quarts upon quarts at high prices. Every dollar expended will save two in meat and medicine bills. At home and at school fruit is better for children than cake and pie, and the table the year round should be supplied with fruit, either fresh or canned. In the latter form raspberries retain their flavor best of all. Farmers say they can buy better than to raise, but they never buy enough. In my own family—not large—we use six to ten quarts of small fruits daily from June to August. A friend with a half-acre city lot had it plowed and fertilized, and planted $26 worth of plants, kept account of expenses for five years, with credit at market rates for fruit consumed; the profit was $160 annually. Every farm and home should have such a half acre, and then will be found health and happiness, as well as money, in small fruit.—J. H. HALE.

Planting Tree Seed.

MY way has always been a success. Ten days before planting I put the seed in a vessel large enough to allow it to swell. I cover it with water that is daily renewed for five to eight days, or till the seed is well swelled. I next saturate a cloth large enough to cover the seed and turn the seed out and mix it well at least once a day. Be sure to keep the cloth wet. Keep the vessel in a warm place if possible, unless it be quite warm weather, and in two or three days the seed will be well sprouted and fit to plant.

Walnuts of all deciduous seed need the most pains, or rather the plan is different. The best way is to put them in the ground when picked from the tree, but always observe the following rules: Place them under four or five inches of soil all together in a bunch, and they should be in a very damp place. Then keep them well soaked with water for three weeks, and occasionally through the winter throw on water. By May 1st some of them will be sprouted. All that are not sprouted put into a barrel in the sun and turn the barrel daily for two or three days, then look at them. Most of them will be sprouted. If any are not water them, and put these through the same process and nearly every one will grow. Cover them two inches deep when planting in heavy soil, and deeper in light soil. I have made it a business.—G. C. HULEE, *Merrick County, Neb.*

THE relative hardness of woods is calculated by the hickory, which is the toughest. Estimating this at 100, we get for pignut hickory, 96; white oak, 84; white ash, 77; dogwood, 75; scrub oak, 73; white hazel, 72; apple tree, 70; red oak, 69; white beech, 65; black walnut, 65; black birch, 62; yellow and black oak, 60; hard maple, 56; white elm, 58; red cedar, 56; cherry, 55; yellow pine, 54; chestnut, 52; yellow poplar, 51; butternut and white birch, 43; and white pine, 35.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

THE SUMMER MEETING this year will be held in the town of Seaforth, early in July, in accordance with an invitation received from the Town Council of that place. Enquiries have also been received concerning the holding of it in Windsor, as the County of Essex is rapidly reaching a foremost place among the counties of Ontario in fruit culture. The officers of our Association are pleased to receive such invitations at any time, and other things being equal, will try to visit each district sending in an invitation in the order in which their invitations are received. These should either come from the corporation of the town, or from the officers of some organization, such as Farmers' Institutes, Horticultural Societies, local Fruit Growers' Associations, etc., who will take an active part in working up a local interest in the meeting.

THE PEACH CROP this season in the Niagara district promises to be fairly good, and this will be a great boon to many fruit growers who have felt much discouragement during the last few years, in which not only has the peach crop failed, but the prices of small fruits have been so low as to leave little profit, and the apple orchard has been, in some cases, only a bill of expense. The peach buds are now swelling, and it is easily seen which are the live buds, even without cutting, from their bright, healthy appearance. Of the hardier kinds, such as the Alexander, Hale's Early, etc., there will be more than the trees should bear, while of the tender varieties such as the Early Crawford, there will be a fair crop, unless, of course, some disaster yet befalls them.

THE PRIMULAS.—Those who have chosen the Primulas will, we think, be rather pleased than otherwise to know that they are to receive, instead of P. Sinensis, two plants of the hardy primroses, viz.: P. Elatior and P. Officinalis. But, lest any one should be disappointed, we have ordered one plant of the Storm King fuchsia to be added to the package. We, however, make this change very reluctantly, and only because of the failure in securing a sufficient number of P. Sinensis.

THE LECONTE PEAR on our grounds is growing famously, but so far has borne no fruit. Mr. J. S. Brown, of

the Illinois Horticultural Society, has a tree five years old, and fourteen feet high, which has only borne two pears; he thinks it grows so fast it has not time to bear. In speaking of

Spraying Trees, the same gentleman said he had found that a much weaker solution must be used for plums and peaches than for apples; indeed, the leaves of the peach are almost too tender to endure the application. It was tried in southern Illinois, and the leaves all dropped.

The Early Victor Grape, which was distributed by our Association in 1886, mildewed badly last year at Cottam, County of Essex. So reports Mr. W. E. Wagstaff, of that place.

Stachys.—One of our French exchanges, the *Bulletin d' Arboriculture*, says that Monsieur Witte, horticulturist, distributed last spring quite a number of these tubers for testing. Out of twenty-one reports, seventeen are wholly favorable to its cultivation as a vegetable for table use.

The Yellows.—Mr. J. H. Hale, of Connecticut, is a firm believer in potash as a cure for this terror of the peach grower. He says, in a paper read before the Massachusetts Horticultural Society, that if a tree was but slightly diseased he would head it back closely, apply from five to ten pounds of muriate of potash, and cultivate well and often. If badly diseased, he would cut away two-thirds of the top—in fact, all the small branches—and shorten in the main ones to within two feet of the trunk, and apply still more potash and from four to six pounds of nitrate of soda to stimulate new growth at once. In most cases, he says, a new and at least apparently healthy growth will take place, and the tree to all appearances be as well as ever; and while it may not be cured, who cares, so long as it lives and produces fine healthy fruit abundantly, and none of the trees near it seem to be any the worse for retaining it. If Mr. Hale is correct in this, it is very important for us peach growers to know it, for we are every year sacrificing scores of beautiful peach trees just because one or two limbs are beginning to show some slight indications of disease.

The Sparrow.—The following recipe for destroying the English sparrow is quoted in the *Garden and Forest*: "Dissolve arseniate of soda in warm water at the rate of an ounce to a pint; pour this upon as much wheat as it will cover (in a vessel which can be closed so as to prevent evaporation), and allow it to soak for at least twenty-four hours. Dry the wheat so prepared, and it is ready for use." It should be distributed in winter in places where the sparrows congregate, but where domestic fowls will not be endangered, and a quick decrease in their numbers is sure to follow. It is further stated that they spread with such rapidity as to cover the surface of the United States and Canada, further and further westward, at the rate of 500,000 square miles yearly, and so numerous have they become in Providence, Rhode Island, that the sexton of St John's church took 970 eggs and two cart loads of nests at one time from the ivy upon the church. These warnings should stir up Canadian farmers and fruit growers to be on guard against a bird whose record is so ill.

Four Hardy Apples.—Mr. J. L. Budd says that only four varieties of apples are recommended for general cultivation in the northern part of the State of Iowa, viz.: Duchess, Whitney, Tetofsky and Wealthy, and the latter only for the most favored portions. He speaks very favorably of the prospective usefulness of many of the Russian varieties, but as yet he considers it too soon to attempt a selection.

Superior Color and Quality of our Apples.

A WRITER in *The Garden* discusses the question of color in apples, and regards it as doubtful whether a highly colored stock has any influence upon the scion in this regard. He thinks, however, that sun heat upon the roots is an important factor in producing color, and therefore that they should be encouraged to grow as near the surface as possible. He says: "We should like to know from North American apple growers, whose fruits are so superbly colored, whether they have so much heat atmospherically that they can afford to permit a deep rooting. . . . In any case, the Americans do beat us in the production of color, etc."

In our opinion, the difference in color between English and Canadian or American grown apples, is owing almost wholly to the difference in the amount of sunlight at the time of ripening. The mists of England are proverbial, while the clear sunny skies of Canada rival those of Italy. Apples, even after they are picked, if left out in full exposure to the sun, will color rapidly; and on the other hand, apples growing upon the interior of the tree are often wholly lacking in color.

Another writer, an apple salesman in Covent Garden, who during the month of December last, handled some 16,500 barrels of apples from America, says of the stock: "Permit me to say that they (such apples) could not be grown in England, and that the worst apples I am at present receiving from America are superior to the best of any I am getting from the home country."

Surely in all this we see a reason for persevering in caring for our apple orchards, for if we can get up a reputation for our special brands we must in most cases succeed in the British market, and should not be too much cast down by such unfavorable experiences as those of the season just past.

How to Graft.

L. H. BAILEY, in his book on apple culture, gives these directions for grafting: In May, just as the leaves are pushing out vigorously, saw off the limb to be grafted where it is an inch or less in diameter. Trim the stub edges smooth and slit horizontally to the depth of about four inches, not more. When the scion is prepared ready for setting it should comprise three buds. The lower end is cut wedge-shaped, to fit into the slit, and on one side of the wedge part should be left one of the three buds. When the scion is set this bud will be deep down in the cleft and covered with wax, but, being nearer the source of nourishment than any others, it will be the most likely of all to flourish, and it will readily push through the wax. The scion is set in the cleft by exercising care that the inner surface of its bark matches the inner surface of the bark on the stub. Wax the whole over carefully and thoroughly, leaving no crack exposed. Two pounds resin melted with one of beeswax and one-half of tallow, makes an excellent wax. As soon as melted pour it into cold water, and when it cools work it with the hands until nearly white. Whenever the wax is handled the hands should be greased with tallow.

The Empire Produce Company.

THIS is the name of a stock company now being formed in Toronto to conduct a brokerage and commission business for the sale of produce such as butter, cheese, and fruits, to wholesale merchants in Great Britain, and also for the sale of such goods to dealers and distributors in Canada.

As fruit growers we shall be glad if any better opening is made for the disposal of our fruits both here and in Europe; and if this company, by having a representative in Great Britain, making direct sales to wholesale fruit merchants in the inland

towns, can avoid for us the gluts and consequent ruinous sales such as were made of our apples last December in Liverpool and London. Mr. Mr. A. McD. Allan, the President of our Association, who has already had such large experience in this very line, will probably be the representative of the company in England.

We have also had much dissatisfaction with the sales of our fruit in Toronto by dealers who sell privately, but make returns to us growers at a nominal wholesale price, less commission. This company, by selling fruit in open competition to the highest bidder, will also be to our interest.

Varieties of Strawberries.

The sixth annual report of the Ohio Experiment Station contains the report of the horticulturist, Mr. W. J. Green, upon small fruits.

Among a very large number of strawberries tested we notice the following results:—*Alpha*, not worth retaining, because little earlier than the Crescent, no larger berries, and much less productive. *Bidwell*, unworthy of cultivation, because it overbears, matures its fruit badly, which also colors slowly, and often rots before it ripens. *Bubach*, healthy, vigorous, prolific, fruit of good form and color, but of medium quality; a promising variety for commercial growers. *Cumberland*, a most satisfactory kind for amateurs, but yielding only about one-quarter the amount the Crescent does. *Crescent*, very valuable, and takes the lead as a market berry where berries of second rate quality are still in demand. *Itasca*, productive, fruit small but of excellent quality. *Jessie*, one of the most satisfactory varieties of recent origin; plants vigorous, healthy and productive, while the fruit is large and showy. *May King*, an established standard variety; not equal to Crescent in productiveness. *Ontario*, differs little from the Sharpless. *Sharpless*, profitable in but few sections, owing to comparative unproductiveness and tender blossoms; requires good soil and extra attention. *Wilson*, valuable in some sections, but less planted than formerly owing to rust of foliage.

The Black Knot.

This troublesome fungus is becoming very common in southern Ontario, and by the majority of farmers is so much neglected that careful growers are much discouraged about the ultimate riddance of it. From the plums it has spread to the Kentish Cherry trees, which are rapidly being destroyed wherever left in neglect. The writer has tried as faithfully as possibly to keep the knot cut off, going over the trees with a water tree-pruner and afterwards burning all the trimmings. But this method is very hard upon the trees, and if the application of any liquid to the parts affected would work a cure, we who are engaged in plum and cherry culture would be very glad to know it.

With this end in view the horticulturist at the Massachusetts Experimental Station has been testing three substances, viz.: linseed oil, turpentine and kerosene, with considerable appearance of success. The applications were made with a brush three different times during the Summer, and in the Autumn microscopic examinations were made, and it was found not only that there were no spores in the warts, but in fact that the sacs (*perithecia*) were not developed enough to produce sphores before the warts were destroyed by the remedies. The linseed oil is counted the best because it is not injurious to the healthy bark of the trees when it runs over upon it, while both the turpentine and the kerosene were destructive to the branch wherever they came in contact with it.

Judging Fruits.

At the late exhibition in Ocata, Florida, a scale of 100 points was

used in judging oranges. Ten points were given to each of the characters, of which five were grouped as "physical" and five as "juice" characters.

It is high time that the subject of judging fruits at fairs was fully discussed at our meetings, and a committee of our best pomologists appointed to draw up a scale of points to aid judges in estimating the comparative merits of our apples, peas, grapes and other fruits.

Mr. Thomas Beall, of Lindsay, has promised to contribute a paper for our Summer meeting under this head, and we hope the subject will at that time receive full consideration.

QUESTION DRAWER

The Tree Cricket.

33. THREE pieces of Cuthbert raspberry canes affected by some kind of borer, of which I have seen no account in print. This borer, as you will see from the enclosed pieces of cane, lays its eggs one season to hatch in May or June of the next. Last season was the first we noticed them, and we at once cut all we could find and burned them; but this season, they are, if anything, worse, and we would like to know

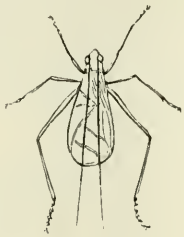

FIG. 36.

FIG. 37.

what to do to get rid of them. Can you, Mr. Editor, or some of our professors, enlighten us?—EDGAR HUSBAND, *Cairngorm*.

The raspberry canes were duly received. The injury is done by the depositing of its eggs in the Autumn, by the Tree Cricket, known to botanists as *Æcanthus niveus*. The female beetle is furnished with a long ovipositor, by means of which she makes an oblique opening half way through the cane, and there places one of her yellowish, semi-transparent eggs; this operation she continues, placing the eggs neatly side by side, in number anywhere from five to fifteen. These eggs are easily exposed to view by splitting the stem (see fig. 38), and are quite interesting subjects for the microscope, about one-eighth of an inch in length and having a peculiar granulated head. About midsummer the young insects hatch out. The perfect insect is a little more than half

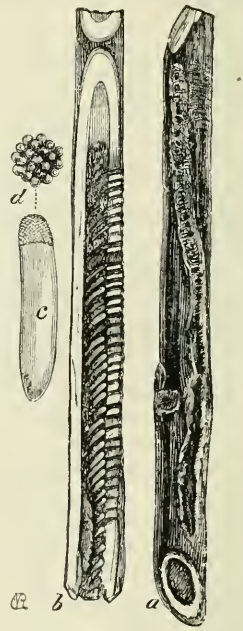

FIG. 38.

an inch long, and is shown in our illustrations, fig. 36 representing the male, and fig. 37 the female. Both are lively fellows, but the males are musical, chirping merrily all day.

Canes affected are weakened so that the crop is materially affected, many breaking off completely with the weight of foliage in the spring.

We have often found the young wood of the peach and apple affected, but to no serious extent, by the same insect. The only remedy yet suggested worth using is the one our correspondent has been doing, viz: to cut off the limbs that are stung, and burn them up, eggs and all.

For more careful details concerning this insect, see "Saunders Insects Injurious to Fruits," 2nd edition, p. 309.

Strawberries in Shade.

34. CAN strawberries be raised successfully beneath trees?—W. A. BROWNLEE, *Mt. Forest.*

No. Strawberries must have open ground for successful cultivation.

Duty on Garden Seeds and Nursery Stock.

35. CAN you tell me what is the duty, if any, on garden seeds and nursery stock?—C. B. PARKER, *Mt. Brydges, Ont.*

Major Anderson, surveyor, H.M's. Customs, Grimsby, says garden, field, and other seeds for agricultural purposes—not otherwise provided for, when in bulk or large parcels—fifteen per cent. *ad valorem*; when put up in small papers or parcels, twenty-five per cent.

The Bud Moth.

36. FOR some years an insect has injured my apple and other fruit trees by laying an egg in the bud. In Spring, it hatches, and the bud expands and glues the young leaf tips together, preventing growth. Within this I find a small red worm which matures in a few weeks, then by a small silken thread descends to the ground. In vain have I searched all my entomological works for a description of this pest. Would you, Mr. Editor, or some reader of your instructive HORTICULTURIST, name this insect and suggest a remedy for its increasing depredations? —FRANCIS COLEMAN, *Hamilton.*

Reply by James Fletcher, Entomologist, Experimental Farm, Ottawa.

I quite agree with you that the moth mentioned in Mr. Coleman's letter, is *Tmetocera ocellana* and perhaps after all it may have the habit of occasionally letting itself down by a silken thread. Of course it gathers together the leaves amongst which it feeds with this material. I should refer him to Saunders' book for the remedies, under the head of "Eye-spotted Bud-Moth. I have an idea that much good might be done by spraying a kerosene emulsion over apple trees just before the buds expand. I believe that this insect hibernates on the twigs as a larva and that it, the oystershell bark-louse, the apple aphis (then in the egg state), and many other insects would thus be destroyed. At any rate it is worth fruit growers trying the experiment.

The Pea Weevil.

37. I AM told that the pea weevil cannot endure a temperature of 15° below zero. Can you give me any definite information on this point?—G. F., *Freeman P.O.*

Reply by Prof. James Fletcher, Entomologist, Experimental Farm, Ottawa.

I am unable to find any mention of the fact that *Bruchus pisi* cannot stand a temperature of 15° Farenheit. I have tried in vain to get either infested peas or a temperature so low as that this year, since you wrote. However, I believe that the grain weevils *Callandra oryzæ* and *C. granaria* are unable to withstand low temperatures, and it is possible that *B. pisi* may also succumb to the same easy treatment. Undoubtedly the easiest and best treatment is to subject the seed to the Bisulphide of Carbon treatment, which consists of putting about a bushel of seed in any tight receptacle and then placing on the top any small vessel which will hold about half a wine-glass of Bisulphide of Carbon. This will evaporate in about twelve hours and the heavy vapor will fall down and permeate the whole measure of seed. This vapor is extremely inflammable and the operation should be carried on out of doors in a shed, and the seed emptied out in the open air away from all fire. The vessel should be kept closed for forty-eight hours when every insect will be destroyed.

Marsh Mallows.

38. Is there any way of destroying marsh mallow in a lawn without injuring the sod? —W. A. Brownlee, *Mt. Forest.*

Reply by J. A. Simmers, Toronto.

I should imagine there would not be any difficulty in destroying this. Cut the plants out and apply a small quantity of salt in each place the plant is cut out.

Tulip Culture.

39. Would you kindly give us a few hints on tulip culture? Should the beds be prepared in the Fall so as not to require any attention in Spring? Should tulips be set in beds devoted wholly to their culture? What time should the bulbs be taken up and when replanted, etc.?

Reply by J. A. Simmers, Toronto.

The proper time to prepare the beds and plant tulip bulbs is in the Fall, and if properly prepared they need have no attention in the Spring, when you will have one of the prettiest sights the eye could imagine, shortly after the frost is out of the ground. In some gardens, beds are made consisting entirely of tulips, but very pretty effects may be made by making a bed with hyacinths, narcissus, jonquils, snowdrops and crocus, mixed, which will flower at intervals until the summer plants are ready to be set out. The bulbs need not be taken up each year, every other year will do, and if so done, take the bulbs up about three weeks after they are done flowering, dry them thoroughly in the sun, and, when sufficiently dry, the bulbs will keep splendidly until the time of replanting—about the middle of October.

Seedless Apples.

40. I send with this a certificate of a new apple. Bloomless, seedless and coreless. A seedling of unknown parentage. Been producing fruit twelve years without bloom. Apple medium size, fine flavor, rich and good, seedless, solid flesh, yellow, and a good bearer. I would like to have it tried in Canada.—G. W. Robinette, *Flag Pond, Va., U.S.A.*

Certificate.

Flag Pond, Va., April 28, 1888.

We the undersigned being acquainted with Mr. G. W. Robinette, and with his bloomless apple, do know that he is a man of truth, and that his apple is as he represents it to be, which produces its fruit without bloom, and is also seedless.

Signed by twelve persons, and certified by W. A. Owen, J.P.

We would be glad to see samples of this curious apple, and would like to test it. Thinking the sport very remarkable, we have submitted the letter to Prof. Panton, Professor of Botany at the Ontario Agricultural College, and his reply is as follows:

"Regarding your question *re* seedless apple, I have not much faith in its continuance. An apple must result from a properly developed flower, and we know fertilization has much to do with this development. See the irregular fruit of some strawberries which are not properly fertilized. The whole question seems to be of a peculiar nature and the results of an abnormal character.

"It is something I have never seen or heard of before, and as far as I can learn, at variance with the teachings of botanical science. I certainly would be very suspicious about it and have little or no confidence in the fact. You had better appeal to some of the practical veterans on the question."

Bruce's Erfurt Cauliflower.

41.—Please tell me through the Question Drawer how much an acre of J. A. Bruce's Erfurt Cauliflower is worth in Ontario markets, and oblige T. R. H., *Cote des Neiges, P.Q.*

Reply by J. A. Bruce, Hamilton.

Respecting our strain of Erfurt Cauliflower we know that from $480 to $600 has been realized per acre, and in many instances where the area planted was from one-quarter to one-half an acre the returns were much greater than stated above. What it may be worth in the future is hard to predict. We only talk of the past.

Primroses and Polyanthuses.

42.—ARE not the new primroses what we have always called polyanthus. I have some in bloom now by the side of those received, and I can't see any difference. THOS. G GASTON, *Hamilton.*

Very near relatives, but distinct. The primelas sent out are otherwise known as *P. officinalis* (cowslip), and *P. elatior* (ox lip), well known natives of England. *P. variabilis* (Polyanthus) is a hybrid between the primrose and the cowslip, and also occurs wild in Britain.

OPEN LETTERS

SIR,—I have had the enclosed in my desk for some time. If you care for it I had best send it to you, as my memory is so bad I may forget all about it.

God has spared me to welcome the daisies again. I don't want you to think me a "doleful creature"; I'm as happy as a sunbeam. Respectfully,

April 2, 1889. GRANDMA GOWAN.

My Shades (a reverie).

IN the gloaming I sit dreaming,
'Neath my grand Catalpa tree,
Vaguely dreaming of my lost ones
Till I'm lost in fantasy.

In the hours of starry silence,
Spent beneath this leafy dome,
Shades of loved ones round me hover;
I know that I am not alone.

There sits beside me "Doneel Dido,"
Lovely, as in by-gone years;
I feel his chubby arms around me;
I feel him kissing off my tears.

And there my merry laughing Nell;
I see her in that pearly rose,
Breathing around her magic spell,
Banishing my fancied woes.

She was to me a Summer day,
My playful sportive fawn;
Her life a sacred melody,
Sweet, as the dewy dawn.

There stands "Madonna Susie Mary,"
With eyes as soft as the gazelle's,
But, ah! some jealous little fairy
Changed her to that Immortelle.

Soft strains, as from an unseen shore,
Like the swelling sigh of my Mary's zither
I hear so oft when the day is o'er.
Is it my love or the woodland zephyr?

Here close beside me dark-eyed Dora,
Sombre, as that dusky pine.
A mystic fragrance lingers o'er her;
I see her in that Eglantine.

At my feet is blue-eyed baby Willie,
The sweetest of the angel lot
Down from God's garden; darling Billy,
You are here, in that Forget-me-not.

And through the leaves that o'er me quiver
I see the dear eyes looking down,
Of him who long has "cross'd the river,"
"Inheritor of unfulfilled renown;"

Partner of my joys and strife,
My love for thee knows no control.
Deem not my love will end with life;
'Tis changeless as my changeless soul

On the threshold of two worlds I stand,
Nought but that starry veil between
My blest and I: my angel band,
We'll meet in the "Palace of the King."

* * * * * * * * *

The spectre moon is brightly beaming;
My shades are gone, all robed in air;
Their dewy kisses, in my dreaming,
Is shower'd on mother's silver hair.

Mt. Royal Vale. GRANDMA GOWAN.

From Mr. J. P. Williams, Prince Edward Co.

SIR,—Since your meeting here last summer I have had to pass through the most trying ordeal of my life. My companion passed away in a moment about 1 a.m., after having been shopping the afternoon and seeing friends in Picton. She went to sleep and never again opened her eyes in this world or spoke; and just five weeks on the same day, Thursday, my eldest son was killed in that heavy wind on the 10th January; this, together with the fearful depression in the foreign apple market, has been a heavy burden to bear. I am slowly recovering just now, and I send you $1 for the renewal of my paper. I have a new variety of white field pea—cross, I think, between Stratagem and Royal Dwarf. From eight single peas saved the first year, I counted 2,470 peas, one single vine producing 517.

Last year I planted one-quarter pound seed and gathered seventy-eight pounds of clean peas: one single pea produced 627.—J. P. Williams, *Bloomfield.*

Direct Connection with English Fruit Merchants.

Sir,—We beg to acknowledge the receipt of the last few issues of your interesting and valuable monthly journal, and shall be pleased to know your charge for a similar advertisement to the one we enclose, which is a cutting from the *London Horticultural Times.*

We notice in your issue for February an abridgment of a letter you have received from Messrs. John Seed & Son, of Hull, which we can endorse, and at the same time we would supplement their remarks by bringing before you and your readers the advisability of direct communications with the English inland markets. Our market has hitherto been supplied with Canadian and American apples from Liverpool and Hull, thereby, of course, adding expense to your importation before they reach us, which expense certainly might be placed in the pockets of Canadian and American growers by direct shipments. Doubtless your readers have already got their eyes open to the fact that it is desirable that the grower and consumer should be brought as near together as possible, so as to avert all middlemen expenses which are not absolutely necessary.

We recognize the fact that it is now too late to ask your subscribers to make us any direct shipments this season, as it is too far advanced, but we hope to bring our name before them in your valuable paper before another season comes round. Awaiting your reply.—Buckoll, King & Co., *Nottingham, Eng.*, March 4, 1288.

Liverpool Apple Market.

Sir,—Your interesting publication for February has been duly received and read with great pleasure. Since our last, SS. "Sarnia" has arrived, and the cargo she brings is, on the whole, exceptionally good, which has assisted materially in sustaining prices; poor stock, however, can only be realized at a considerable discount. We quote: Baldwins, 7s. 9d to 15s.; Russets, 11s. 9d. to 27s. 6d.; Spies, 11s. to 17s. 3d.; Various, 8s. 9d. to 15s. 9d. There is only a medium demand, and heavy shipments would completely demoralize the market. Awaiting your further favors.—Williams, Thomas & Co., *Liverpool, Eng.*

Fruit Prospects in and Around Berlin for Coming Season.

Sir,—As might naturally be expected, the apple crop will be light; indications show a sparcity of blossomed buds. Last season's crop being in excess, a reaction is necessary in order to restore vitality to the trees. Pear trees make a better exhibit, and a fair yield of fruit may be anticipated. I have never seen a better show for plums; the trees are fairly crowded with blossom buds. Last season the plum crop was a failure, but this season is likely to make up for the deficiency. Small fruits look well. Strawberry plants, raspberry canes and grape vines have all passed through the winter apparently without damage.

The past winter has been exceptional. The lowest point reached was only 15° below zero, and that only on two occasions, whilst during the previous season it reached 30° below zero, which was fatal to many vines and canes not protected.—Simon Roy, *Berlin.*

The Champion Grape.

Sir,—In 1887 my Champion grape vine took a rest by coming out in leaf first June, and bearing a very light crop. This year it has regained its ascendancy by ripening more than 150 pounds of grapes.—Francis Coleman, *Hamilton.*

Encouraging.

Sir,—It is with much pleasure that I again send you my annual subscription for The Horticulturist, which I hope may increase in circulation, as well as it has in usefulness, for it is an honor to our Ontario Fruit Growers' Association to have such a journal, giving the fruit growers an opportunity to communicate their experience in different subjects enlightening one another in a very friendly manner, and also encouraging every attempt at fruit raising and home adornment. The latter is needed badly enough in some parts of Ontario, for in some places you will find nothing but a few fruit trees, and some currant and gooseberry bushes struggling for an existence amongst grass and weeds, with no attempt at making home attractive by the addition of a few evergreens or ornamental shrubs. Men who are very well off and have fine houses, are as slow, and some of them are slower, than they of moderate means are in making beautiful. A few dollars well spent each year, will soon change the appearance of most farms, and will add much to its value. If our farmers generally could be induced to pay more attention to small fruits, and even a good vegetable garden, it would help to lessen the doctor's bill in many a house, and I think that for all the extra time that it takes to keep a small garden in order, that the time so spent pays better than buying your supply from the fruit dealer.—J. M. Waters, Maple Grove, Fernhill, Ont.

OUR BOOK TABLE.

New Books.

THE ILLUSTRATED DICTIONARY OF GARDENING, a practical encyclopedia of horticulture. This is the most complete work of the kind ever published, illustrated with over 2,000 engravings and containing full information about plants, trees, shrubs, fruit, vegetables. It is accurate both from a scientific and a practical point of view. It is published in seven handsomely got up volumes, at $3.00 each, and may be ordered through this office. The agent for the U.S. and Canada is Mr. Jas. Penman, 12 Dey Street, New York City.

INSECTS INJURIOUS TO FRUITS, by William Saunders, F.R.S.C., F.L.S., F.C.S., Director of the Experimental Farms of Canada, etc. Illustrated with 440 woodcuts. Second edition. Philadelphia: J. P. Lippincott & Co., 1889. Most of the scientific treatises upon Entomology are clothed in such technical language that they are wholly unattracting to the ordinary farmer or fruit-grower; but it has remained for Prof. Saunders in a most unique manner to simplify this science so that the most ordinary reader can read it with interest and be able to identify all the insects which usually come in his way and learn how to destroy them. This second edition is not only cheaper than the first edition, but it is also more valuable, for it has been most carefully revised by the author and made as complete as possible. The price is only $2.

Reports.

THE FORESTRY REPORT, 1887-8. *Compiled at the instance of the Government of Ontario by R. W. Phipps, Toronto.* Since the Fruit Growers' Association of Ontario has for one of its objects the diffusion of a knowledge of forestry among the farmers of Ontario, we very gladly notice this fifth report of Mr. Phipps on this subject. It is a volume of 98 pages and contains articles upon such subjects as English and Scotch Forestry, Forest Management, Forest and Rainfall, Increasing the Durability of Timber, Treatment of Parks, Pruning of Forest trees, and Varieties of Trees to Plant, etc. The interesting descriptions of the old country forests showing the high value at which they are held by the expense bestowed upon their preservation sets forth in bold relief the reckless destruction to which our noble heritage of forests is being yearly subjected. That forests influence rainfall has been disputed of late, perhaps by those who are pecuniarily profited by their destruction; but this position is well maintained by Mr. Phipps, who shows, both from a meteorological standpoint and from actual facts, that forests really do very largely affect the rainfall of a country, and that upon them consequently depends, to the same extent, its prosperity. The remarks concerning the spoilation of the beautiful natural groves in the vicinity of Toronto, which, with proper treatment, might have been converted into magnificent pleasure grounds for the health, amusement and relaxation of the citizens of Toronto during ages to come, are well worthy of the careful attention of the voters, who should see to it that such public officers are elected as have a proper appreciation of the value of these natural forests and know something about turning them to good account.

A RECORD of some of the work done in the Botanical Division, Bulletin No. 8, U.S. Dept. of Agriculture, Washington, 1889.

PEACH YELLOWS, a preliminary report by Erwin F. Smith, B. Sc., special agent. Prepared under the directlon of the Commissioner of Agriculture of the United States, 1888. As a preliminary report this volume is full of interest to peach growers, although so far no certain explanation of the nature of the disease, or of the best means of curing it, is discovered. The engravings show the spread of the disease in individual orchards, the spread throughout the United States and Canada from a small section of country about Philadelphia, where its presence was first reported, and pictures of trees and fruit affected. Altogether, the report chiefly amounts to a history and extent of the disease, and to a demolition of most of the favorite theories hitherto promulgated. Regarding the cure of peach yellows by use of potash or phosphates, he considers that the evidence seems to warrant that such treatment neither cures nor prevents the disease. See Report, p. 40.

EXPERIMENTAL FARMS. Reports of the director, Prof Saunders, and his able assistants, for 1888,

THE reports of the horticulturist, Mr. W. W. Hillborn, and of the entomologist, Prof. Jas. Fletcher, from year to year, will prove of increasing interest to us fruit growers.

Catalogues.

HENDERSON'S "FARMERS' MANUAL, 1889. Peter Henderson & Co., 35-37 Cortlandt Street, N.Y. Grasses, Grains, etc.

GEO. H. WILLIAMS, Thorold, Ont Price List of Fruit Basket Packages.

LEWIS ROESCH, Fredonia, N.Y. Grape Vines, Small Fruit Plants, etc., 1889

JOHN LITTLE, Granton, Ont. Small Fruits

GEO. S. JOSSELYN, Fredonia, N.Y., 1889 Small Fruits Plants and Grape Vines

J.T. LOVETT, Little Silver, N.J., Spring 1889. Nursery Stock.

S. H. MITCHELL, St. Mary's Ont. Price List Garden and Field Seeds.

J. A. SIMMERS, 147 King Street East, Toronto. Seeds.

A. GILCHRIST, West Toronto Junction, Ont. Evergreens, Roses, Clematis, etc.

BEST MARKET VARIETIES.

	PER DOZ.	PER C.	PER M.
Cuthbert Red Raspberries	$ 25	$1 00	$5 00
Mammoth Cluster Black Caps, tips	25	1 25	10 00
Mammoth Cluster Black Caps, yearlings	50	2 50	20 00
Gregg Black Caps, later, larger, firmer	40	1 50	12 00
Raby Castle Currants, fine grower, 2 yrs., great bearer	1 00	4 00	35 00
Houghton Gooseberries, 2 yrs. and 3 yrs.	75	3 00	.....
Downing Gooseberries, larger, fruit 2 yrs.	1 25	8 00	.....
Concord Grapee, 2 yrs	75	4 00	35 00
Worden, Delaware, Brighton, Pocklington, Salem, Lindley, Agawam, Wilder	1 25	8 00	.....
Norway Spruce Trees, 20 to 25 in.	....	10 00	.....
Cut Leaved Silver Maples, 6 to 10 ft.	....	10 00	.....
Russian Mulberries, 5 to 9 ft	....	8 00	.....
Ash, 6 to 7 ft., nice	....	8 00	.....

Many other varieties of Trees, Small Fruit Plants, and Ornamental Shrubs. (t f)

E. MORDEN, Niagara Falls, South, Ont.

ORCHARD OR FOREST PLANTATION.

A competent planter and farm manager will take an equipped farm on shares, or other terms, where allowance will be made for an orchard or timber plantation, or will contract to plant and care for the same, replace all losses, and guarantee a fixed number to live and do well for three years.

ORCHARDIST,

(Feb. t. f.) Care HORTICULTURIST.

NOTICE.

To all who intend planting out Fruit of any kind:

It will pay you to send a list of your wants to us, and we will give you as good prices as good and reliable stock can be got for in Canada, and guarantee your Trees and Plants to come in good order.

Plants, Vines and Small Trees Mailed to all parts of the Country.

The New Apple, Princess Louise, a specialty. Niagara Grapes at low rates.

An assortment of new Fruits. Send for Catalogue and prices to

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ST. CATHARINES, ONT.

ROSES, GRAPE VINES, ETC.

HYBRID PERPETUAL ROSES,

About 100 varieties, including the hardiest and best kinds, good strong plants, worked low on Manetti. Price 25 to 50 cents each, $3.00 per dozen, $20.00 per hundred.

GRAPE VINES, Rogers' varieties, etc., 25 cents each, $2.00 per dozen, $15.00 per hundred.

CURRANTS, Fay's Prolific, extra strong plants, 20 cts each, $1.50 per dozen, $10.00 per hundred. Raby Castle, strong plants, 75 cts. per dozen, $5.00 per hundred. Gooseberries, Raspberries, Strawberries, etc.

Price List on application.

S. BURNER,

HAMILTON, ONT.

A NURSERY AT YOUR DOOR.

TREES, VINES, PLANTS.

Just the kinds wanted. Strictly first-class.

SPECIALTIES — The Globe Seedling Peach, Russian Apricot, Eaton, Vergennes and Worden Grape Vines, Jessie Strawberry, and other New and Old Sorts.

Your order solicited at the Central. The Mailing Department receives special attention. See Free Catalogue before placing your orders.

A. G. HULL, Central Nursery, St. Catharines, Ont.

(Feb. 4 t)

NORWAY SPRUCE.

6 to 8 in. transplanted, - - - $3.00 per 100

8 to 10 do. - - - 4.00 do.

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NORWAY SPRUCE

IN LARGE QUANTITIES.

Also ROSES CLEMATIS.

Climbers, Shrubs, Dahlias, Herbaceous Plants etc., etc. Send for Price List.

A. GILCHRIST.

Removed to WEST TORONTO JUNCTION. 3-3t.

Strawberries for $1.00 each Collection.

No. 1.—5 Eureka, 5 Bubach, 5 Jessie, 5 Gandy's Prize, 5 May King.

No. 2.—5 Eureka, 5 Gandy's Prize, 5 Haverland, 5 Cloud, 5 Mammoth.

No. 3.—5 Eureka, 5 Monmouth, 5 Gold, 5 Pineapple, 5 Warfield.

No. 4.—5 Eureka, 5 Burt, 5 Jessie, 5 Belmont, 5 Monmouth.

I will send the above four collections, fourteen varieties of strawberries, by express, for $3.00. They embrace from the very earliest to the very latest varieties, and they will be packed and labeled in the most careful manner.

A free circular giving a description of the new seedling "Eureka" now for the first time offered, and other new kinds, with the most valuable of the old varieties. This circular will be ready about the middle of February. Send for it.

3-2t. JOHN LITTLE, Granton, Ont., Can.

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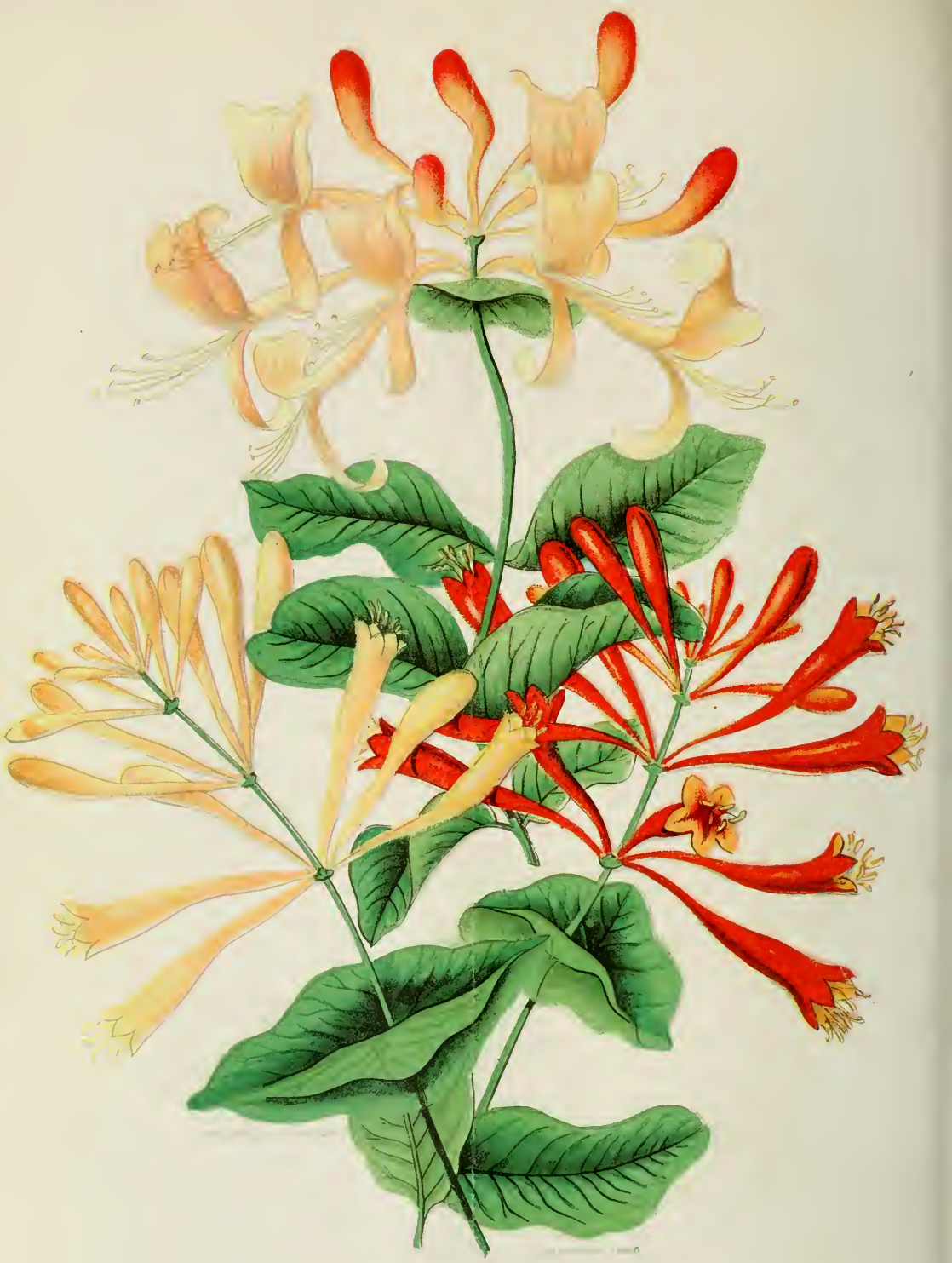
For a most Instructive and best Illustrated and Descriptive Retail Catalogue, especially for the North and West—also for wholesale rates—write to

C. G. PATTIN, Propr.,

4-2t. CHARLES CITY, IOWA.



HONEYSUCKLES.

THE

Canadian Horticulturist

VOL. XII. *JUNE*, 1889. No. 6

HONEYSUCKLES.

AMONG the few desirable climbing plants suitable for the adornment of the home grounds, and hardy in Ontario, the Honeysuckles claim a prominent place, both on account of the beauty of the flower, and the fragrance of most varieties. The name honeysuckle is probably got from the practice of sucking the flower for the drop of sweet juice at its base. It has long been the favorite creeper to adorn the pillars of the porch, and to cover a lattice screen, as it is witnessed by Shakespeare, who, nearly three hundred years ago, wrote

> "Beatrice, even now,
> Couched in the *Woodbine* coverture,"

referring, no doubt, to the Honeysuckle, so common in England, known as *Lonicera caprifolium*, or else the *Lonicera periclymenium*, both of which were introduced from the Continent, and known as Woodbines. The former was also called Goat's-leaf, which is simply a translation of *chevre feuille*, the French name for the whole family of Honeysuckles, and of *Caprifoliaceae*, the Latin name for the botanical order to which they belong. We find John Milton, speaking of the Honeysuckle, miscalls it the Eglantine, a name poetically given to the Sweet Briar (*Rosa rubiginosa*),

> "Through the Sweet Briar, or the Vine,
> Or the twisted *Eglantine*."

The genus *Lonicera*, or Honeysuckles proper, received its name from Adam Lonicera, a German botanist, who flourished between the years of 1528 and 1586. This genus is a very extensive one, about eighty species having been enumerated, some of which are hardy, some half hardy, some deciduous, some evergreen, some erect, and some climbing.

In our colored plate we have represented three of the most popular of the climbing Honeysuckles, viz., beginning from the left hand side :— *Lonicera flava* (Yellow Trumpet), light yellow, fragrant, a native of North America, which was introduced into cultivation in the year 1810. *Lonicera Periclymenium Belgica* (Monthly Fragrant or Dutch Honeysuckle), which we referred to above as a native of Europe. The

flowers are red and yellow, and continue all Summer. It is also very fragrant. *Lonicera sempervirens* (Scarlet Honeysuckle); the flowers of which are of a beautiful scarlet, but inodorous. This is a strong rapid grower, and very handsome.

In some future number we hope to give a plate of *Lonicera Halleana* Hall's Honeysuckle), which is one of the best bloomers of all, continuing from July to December; its flowers are a pure white, changing to yellow, and very fragrant. It is a strong grower, and holds its leaves until January, so that it may almost be called evergreen. Perhaps of the whole list, no variety can be more confidently recommended for general cultivation than this one.

SEASONABLE HINTS FOR FRUIT GROWERS.

THE fruit season of 1889 is close upon us, a time of hurry and of hard work for fruit growers, and, of late years, a time of small returns for labor and money invested. Many a man who has taken up fruit culture for profit, without capital and without a knowledge of the business, has utterly failed; and even some more experienced fruit growers, owning large orchards of apple trees, have found them so unproductive, or else have met with such misfortunes in the disposal of the crops, that they have become discouraged, and openly declare that apple culture is no longer profitable. Some have even gone so far as to dig out their orchards, although they consisted of choice varieties of fruit trees in the prime of life.

Now, we claim that this is a serious blunder, and that, properly treated and economically managed, the apple orchard will average a far better return for the money invested than any other farming crop which could possibly be grown upon the same quantity of land.

One great obstacle in the way of successful orcharding is the gathering of the crop. Handling every apple, one by one, twice over, first in gathering from the tree, and then in assorting, is very expensive work in a large orchard, as the writer knows to his cost, and usually a large quantity is ruined by falling, before the work is completed. Now, if we can find some more rapid way of gathering our crop in the busy months of September and October, an important step toward turning the scale in the way of profit would be taken.

On page 197 of vol. xi. allusion was made to a Yankee invention for gathering apples, and, since the apparatus received favorable notice at the last meeting of the Western New York Horticultural Society, we have thought best to draw attention to it in these columns. At that meeting it was stated that from six to eight acres of orchard could be gathered with it in a week, and that five men would gather 200 barrels per day. The great fear we had was

that fruit would surely be bruised by its use, but it is stated by those who have used it that the fruit is in better condition than that picked by hand. We have secured a cut of the

APPLE GATHERER,

which will be of interest to our Canadian growers, even if the Gatherer itself should not entirely fulfil our expectations.

The weight is not very great, for two men can take it up and carry it to any part of the orchard. In size, it is 18 ft. across at the top; can be folded to occupy a space 4 x 4 ft.,

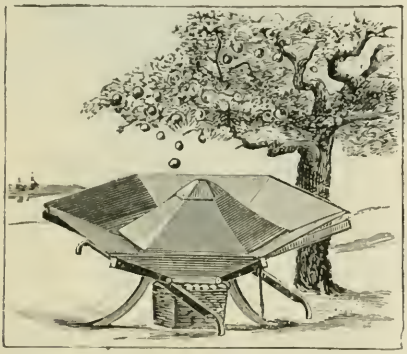


FIG. 39.—APPLE GATHERER.

and is 11 ft. high. The shaking of the branches is easily performed by using a pole with a hook on the end, and, where the lower branches are in the way, they may be easily pulled aside by such an instrument while the apples above are being shaken down.

The cost of this machine is $50. We hope soon to test it at Maplehurst fruit farm, and will then be prepared to say more about its merits and demerits.

A USEFUL LADDER.

The time has not yet by any means arrived when we can dispense with the ever-useful ladder, for, even should the Apple Gatherer come into general use, it would only be in large commercial orchards, and, even there, ladders would be needed for stripping the trees of apples, which could not be shaken down into it, from the tops and middles of the trees.

Among the various styles of lad-

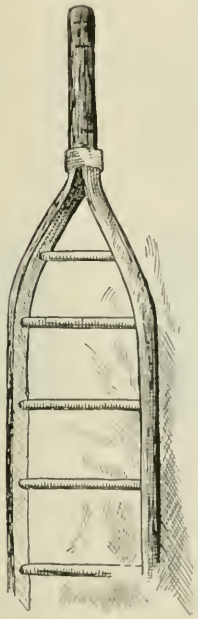


FIG. 40.—FRUIT LADDER.

ders, such a kind as was described by the writer on page 56 of vol. I. of this journal is most useful. It is made of one stout pole, mortised into a base made of scantling, and having rounds, driven through it for climbing upon. Such a ladder can be very easily made on a rainy day, and can be used in cases where the ordinary two-barred ladder is useless; for, by reason of the single pole at the top, it can be safely rested in any crotch, while the scantling at the bottom pre-

vents it from turning. Such a ladder is convenient in the peach orchard, among very tall trees, where a step-ladder is too short, unless of an unwieldy size.

In a recent issue of the *Farm and Home*, Mr. Niles, of Vermont, gives directions for making a ladder which has the double bars at the lower part and the pole at the top. He says :

"Cut a spruce pole, or one of some other suitable wood, of the desired size and length. Have it as free from knots as possible. Bore holes through it every eighteen inches, and let the holes have a diameter of at least an inch and a half. Beginning at the thickest end, split the pole to within two feet of the top with a rip saw. At this point fit a ring around the pole. Now spread the halves apart as the engraving shows (fig. 40.) The ring will prevent the pole from splitting further, and if it be green and tough it will not break. Strong rungs, which have already been prepared, should be inserted and the pole pinned to them. The bottom of this ladder should be a trifle wider than the top. The beauty of the contrivance is that it can be inserted in any part of the tree and will not tip over worse than ordinary ladders. I prefer it at picking time to any step-ladder I ever saw."

A PACKING HOUSE.

Among our building plans, that of a suitable house for the fruit grower to store and pack fruit of all kinds has not yet appeared. The growing and shipping of fruit to distant markets is a comparatively new business, and has not yet been furnished with all the best appliances. Most of us in the Niagara Peninsula use our barns and carriage-houses as fruit packing-houses during the fruit season. The writer has a building about 72 x 36, two stories high, all of which he devotes to storage and packing of fruit, and the storage of baskets, barrels, etc. Besides this,

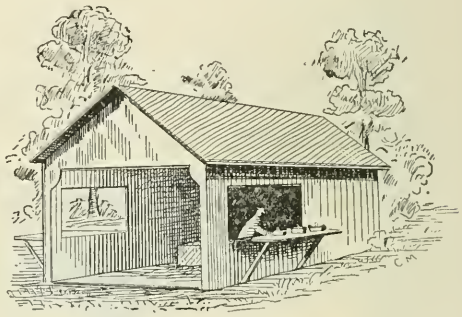


Fig. 41.—Fruit Packing House.

temporary sheds are erected outside near the strawberry patches for use in packing time.

A very neat berry packing-house is shown in the engraving, copied from the *Orchard and Garden*, which would be a great convenience in a plantation of small fruits, providing a dry place for the storage of baskets and crates, and a cool, airy room for packing and storing the fruit until ready for shipping. Where the plantations are separate from each other on the same farm, a movable house of similar design might be constructed of light lumber on a smaller scale, and having runners made of pieces about 3 x 6 in., so as to be drawn about as required from one patch to another.

TOMATOES TESTED.

AT the Agricultural College, Michigan, 148 varieties of tomatoes have been tested. A large number of the so called varieties have been found synonymous, or so nearly alike that they could not be readily distinguished; still the result of the work greatly simplifies the work of the gardener who, when selecting, need only consider the groups, and not the

FIG. 42.—WONDER OF ITALY.

sub-varieties, which differ little from each other.

For pickling and preserving, the Cherry, the Pear and the Plum tomatoes are commended. One of the varieties of the latter group, known as "Wonder of Italy," is shown in our engraving.

For ordinary cooking and table use, the apple-shaped varieties are the best, as Advance or Hathaway's Excelsior for early, and almost any in the group of Cardinal, Paragon or Perfection groups for main crop. Of these latter, the Ignotum, of the Paragon group, is especially commended in the following terms:

Among the older varieties the Ignotum deserves special mention. This tomato was obtained as a sport from *Eiformige Dauer*. This year it exhibited some tendency to revert, but it furnished us the largest and finest fruits we had. They were thick, solid and quite smooth. One of the earliest to ripen, the plants remained vigorous throughout the season notwithstanding the dry weather, and still bore a number of

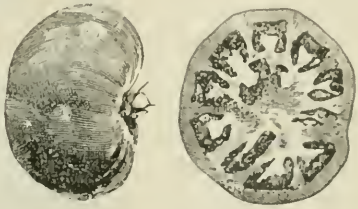


FIG. 43.—IGNOTUM.

green fruits when killed by the frost. The variety was tested by quite a number of specialists, and without exception they spoke favorably of it. Prof. Goff, of the New York Experiment Station, writes: "Although the fruits were not very uniform, some were as fine as anything in the shape of a tomato I have ever seen; of good size, remarkably solid and perfectly smooth. With a few seasons' selection it will doubtless be unsurpassed."

The *Mikado* is described as quite early, and averaging the largest of any tomato grown: the *Acme* is of thin skin, making it too tender for distant shipment.

STACHYS TUBERIFERA.

THERE seems to be a great difference of opinion respecting the value of this new vegetable. Mr. E. S. Goff, of the Geneva Experiment Station, says:—

Stachys Tuberifera, a so-called new vegetable from Northern Africa cannot be pronounced a very great acquisition. It belongs to the Mint family, and produces small, fleshy tubers, which in our trial only attained the size of acorns.

A correspondent of *The American Garden*, says he is certain that it grows in the district of the Bay of Chaleur, P.Q., being, perhaps, brought there by the early settlers from France, but whoever introduced it, he considers it as great a nuisance as the Canada thistle or the dandelion.

It is just possible that the variety of Stachys growing near the Bay of Chaleur is not the same as the one recommended for a garden vegetable, as there are at least 160 named species, some of which are of a very weedy character and grow very freely.

Monsieur Fr. Burvenich, Professor in the State School of Horticulture of Belgium, in an article in the March number of the *Bulletin d'Arboriculture, etc.*, speaks favorably of the stachys, so far as his experience goes, and adds:—

"This new vegetable has been favorably noticed at the National Exposition of the Art of Cookery, held at Brussels in December, 1888. One of our friends, a great lover of vegetable culture, once said to us that the Crones (Stachys) were at least no worse than artichokes. But the question of taste is a settled one, for at the banquet given to General Carnot, upon his accession to the presidency, all the guests found the dish a delicious one."

FIG. 44.—STACHYS.

We copy from this journal a cut of the plant showing the tuberous roots in their relative size.

SOME PROMINENT CANADIAN HORTICULTURISTS.—VII.

R. McKNIGHT, OWEN SOUND.

IT is always interesting to trace the history of those gentlemen who have made their own way in this world, and from humble positions gained wealth and honor. The consideration of such instances is

inspiring to our young men, imparting ambition to excel, and suggesting hints for their guidance.

Such an example is set before them in the case of Mr. R. McKnight, of Owen Sound, who came to Canada from Ireland in the year 1836, at the age of nineteen, to seek his fortune. His first employment was in a saw mill, where, owing to his ambition to stand first to his qualifications, he became, in six months time, manager of the concern, a post he held for three years.

Fig. 45.—R. McKnight, Owen Sound.

In 1860 he turned his hand to school teaching, which profession he pursued with ability for six years, and, later on, devoted himself to mercantile life, which he conducted successfully in Markdale, Cookstown, and last of all in Meaford. Not long since, he was appointed Registrar for the County of North Grey, a position which led him to reside in Owen Sound. His home surroundings at the latter place testify to his taste and skill in horticulture, and, although more properly classed among the bee-keepers from the especial attention he gives to that pursuit, yet as a fruit grower he holds no mean place, and merits a notice in these pages.

In reply to a letter asking Mr. McKnight for some notes of his life as a horticulturist, he wrote the following letter which we insert in full:—

Dear Sir:—Referring to your favor of the 10th April, in which you note receipt of electrotype, kindly offering to use it if furnished with notes, I have to say in reply that nothing I have done in the way of horticultural pursuits entitle me to be classed among the prominent promoters of the industry. I have never been other than what may be fairly termed an amateur in the business. I have two orchards; but my home one receives most of what attention I bestow on the culture of fruit. In this I cultivate all the fruit — large and small—adapted to this section of Ontario. Some years ago I thought of growing what peaches would serve my own family, if that were possible. To this end I ordered one hundred trees of the most suitable varieties, and planted them. I regret to say there is not one of them alive to-day, nor did I even get a fruit from them. Most of my spare time has been devoted to bee-keeping in recent years. When in London at the Colonial Exhibition (where I went as one of the delegates in charge of our honey exhibit) I thought it would be a good opportunity to secure a future market for the one hundred or so barrels of apples I yearly have to sell. I accordingly made the acquaintance of John Draper & Son—one of the largest fruit handling firms of

Covent Garden, London. I wrote home; had three or four barrels of apples sent out, which arrived and were sold under my own eye. The venture was the reverse of profitable, and anything but creditable to the country. Depending upon others to pack them, they were put up in the usual way with the usual result; superb fruit thrown away through careless handling in the orchard. London is a good market for good fruit, but a poor one for inferior fruit. Fruit, especially Canadian apples, always does and will continue to bring a good price. But it is worse than folly to send them to arrive in a damaged state. There is a class of dealers in London with whom quality is a first and price a secondary consideration, and who never touch inferior or damaged fruit. The latter are slaughtered among the costermongers and East End corner grocers and fruit men. The men who successfully cater to the wants of the first class may calculate upon uniformly good prices year after year. I was present at the sale of a number of consignments from Canada, and could not help blushing at the folly of our people in sacrificing fine fruit through carelessness in packing and sorting. Nova Scotia sends a great quantity of apples to London. Their barrels are not so large as ours. They are sold as "Nova Scotia *Barrels*," while our packages are always advertised as "Canadian *Casks*." There is money for the man who uniformly succeeds in laying down our apples in London, carefullly graded and in prime order.—R. McKnight.

FIGHTING INSECTS.

THE CODLING MOTH.—The experience of others confirms our own regarding the benefits of spraying, and therefore we are doing the work more carefully than ever among all our fruit trees. Mr. A. C. Hammond, Secretary of the Illinois Horticultural Society, says he treated his trees twice, at an interval of ten days, with London purple, and as a result from 60 to 75 per cent. of his apples were perfect, and about 85 per cent., marketable, while adjoining orchards not sprayed did not produce a peck of perfect fruit.

We would advise all orchardists reading this journal to lose no time in giving their trees a careful spraying, and we shall be glad to have the results for publication. The proportion of Paris green that we recommend is one quarter of a pound to fifty gallons of water, or one ounce to every ten gallons.

Plant and Bark Lice. — The spraying pump comes in most useful for these insects also, as it is impossible to apply kerosene emulsion with a brush or broom, except to the trunk and larger limbs. These we first scrape carefully with a hoe, and then scrub thoroughly with a wash of potash and water in the proportion of two pounds of the former to seven quarts of the latter. But sometimes when the bark lice are very bad we find them far out on the branches, and then nothing will do but spraying with kerosene emulsion. For this Prof. Cook recommends the following formula: Kerosene, one pint; soft soap, one quart; and boiling water, two gallons. A stronger emulsion, which is also suitable for spraying our cherry trees for the black aphis, is made as follows, and is one we use for all purposes, viz.: Soap, half a pound, mixed to strong suds

with one gallon of boiling water, and while still hot add two gallons of kerosene. This may be used diluted as wanted with ten parts of water, and sprayed over the whole trees about the first week in June, when the young lice are first hatched out. Some are afraid to use kerosene for fear it will destroy the bark of the trees, but diluted as above described there is not the slightest danger. To test the danger of its use, we applied clear kerosene with a brush to some trees affected with bark lice, giving one application to one tree, and three to another, in the month of June. The former tree was not injured in the least, while the bark of the latter was destroyed in several places. From this it is evident that when diluted no injury need be feared.

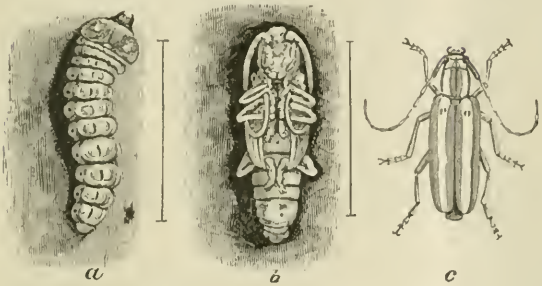


FIG. 46.

THE BORER is much more troublesome in our orchards than we like to admit. We find that where trees are situated on unfavorable soil, or are for any other reason somewhat stunted in growth, the borer is especially destructive, and treatment should not be neglected. A good preventive is made as follows: One pint crude carbolic acid, one quart soft soap and two gallons hot water. Thoroughly mix and apply with a cloth to trunk and large branches, two weeks after blossoms fall, and again three weeks later. Another, recommended by Prof. Saunders, is simply soft soap reduced to the consistency of a thick paint by the addition of a thick solution of washing soda in water. Apply in the morning of a warm day, and it will soon dry, and not be easily dissolved by the rains. The treatment should be given early in June, and again during the early part of July.

There are two kinds of apple tree borers—the round-headed, and the flat-headed, the latter of which we described in vol. xi., p. 147. The former is known scientifically as *Saperda Candida*, and was first noticed as destructive to our apple orchards in the vicinity of Albany, New York State, in the year 1825. Our readers may be able to recognize the full grown beetle from fig. 46-*c*, which is about three quarters of an inch long, and pale brown on the back, with cream-colored stripes. While the flat-headed borer deposits its eggs very often on the upper side of the large branches, this one chooses only the trunk, near the surface of the ground, and usually upon the south or south-west side. These are laid singly during those months, and hatch out within a fortnight into a whitish larva, with a chestnut brown head, with black jaws about an inch in length, and without feet (see fig. 46-*a*.) In this destructive stage it remains about three years, the first just beneath the bark, and later excavating through woody portions of the tree until ready to transform into a chrysalis (see fig. 46-*b*), and two or three weeks later into a perfect insect·

THE LARNE APPLE—ALIAS, THE BAXTER.

By D. Nichol, Cataraqui, Ont.

NOTICING that this magnificent apple is now gaining some prominence, and being, perhaps, the only one now living who can give its correct history, I deem it expedient to ask you the favor of its publication in the Horticulturist.

In the year 1855 I started nursery business in company with the late Mr. Rich. Coleman, of Lyn, near Brockville. During the following Winter I observed an old gentleman (Mr. Baxter) peddling in the village some very handsome, large, red apples at five cents each; I purchased a few, and being so struck with their appearance I made inquiry as to where they were grown, and so forth. Mr. Baxter informed me that the tree from which the apples were plucked was growing at Larne's Mills, on the north shore of the St. Lawrence River, about thirteen miles west of Brockville. I asked him for some scions from the tree, and in a few days thereafter he kindly brought me twenty-five strong shoots, which I root-grafted, and from which I raised about fifty trees. These, I believe, were the first trees of the kind ever propagated. I named them the "Baxter."

The following year I spoke of my discovery to Mr. George Leslie, nurseryman, Toronto, and at his request I purchased for and sent him a bunch of scions of the "Baxter" apple tree.

Subsequently becoming anxious to see the parent tree with the fruit growing on it, and to ascertain its habits, I drove to Larne's Mills, and I found it growing in an old orchard belonging to Mr. Billa Larne, who told me he brought with him from France, in the year 1813, the seeds from which the tree grew, and that he was entitled to the name of the apple, although Mr. Baxter had a large tree top-grafted with the same; so henceforth it was called the "Larne" apple; that is its proper name. I have of it here in my orchard at Cataraqui, twenty trees in robust health, yielding annually profitable crops. In Kingston market the fruit sells more readily and at rather higher price than any other apple offered for sale, although it is not by any means equal in quality to the N. Spy.

At the same time the Larne trees were planted, which is twenty-one years ago, I planted 100 Spys and am now digging out the last of their remains. I will not longer strive to produce my favorite apple in this climate. In trying to produce good fruit of the Spy, Greening, Baldwin and King, I think I have expended more time, labor and money than any other living man, but am now forced to the conclusion that these choice sorts can only be grown successfully in a very small proportionate area of Ontario.

In apples our great need is a hardy, long-keeping, showy apple of good quality, which could be shipped to foreign markets with advantage. Tree hardy as the Duchess, fruit hardy as the Baldwin, color, size

and flavor approaching the Spy; whoever will produce such an apple would be entitled to a bonus equal to that offered to the genius who will kill all the rabbits in Australia.

We have innumerable varieties of good Fall apples which thrive well north of here, but a good hardy Winter apple we do not possess. The chief value of the Larne consists in the hardiness, robustness and durability of the tree, its regular bearing habit, and the showiness of the fruit. As a cooking apple it is decidedly preferable to the Alexander, and it keeps three months longer. Its flavor is infinitely superior to the Ben Davis, and with the Larne there is no small trash. But it is not really a shipping apple, unless we obtain better shipping facilities with more careful handling than we have at present. If the Larne could be presented in good condition in the English market, I have no doubt it would bring the very highest price. I have shipped to England a good many barrels of different kinds, but the only kind which arrived at their destination in good condition was the American Golden Russet. The demand for it, however, seems to be limited, on account of its rather small size. But I fear I transgress on your valuable space.—*May 11th*, 1889.

HORTICULTURAL REMINISCENCES.

By George Leslie, Sr., Toronto, Ont.

SOME time ago I gave your readers some notes* of my first ramble among the American nurseries of the early days. My second visit was nearer home. In the Spring of 1840, I found Mr. Barry, of Rochester, a clerk in the seed store of Messrs. Ronald & Batome, corner of Buffalo and State Streets, and Mr. Elwanger in charge of the greenhouses of the same firm. With the exception of a few small patches covered by a miscellaneous collection of young trees there was nothing about Rochester to indicate a forthcoming nursery centre. In the Fall of the same year Messrs. Elwanger & Barry entered into partnership, and leased six acres of land near Mt. Hope from a Mr. Gilman for the purpose of starting in the nursery business. I found these industrious young men busy fencing and plowing their land. That Fall I could not find all the stock I wanted, although I got some samples from Mr. Row, of Greece, five miles west of Rochester, who was beginning business. I purchased a few apple trees from Boarden Brothers, and some roses and shrubs from Mr. King, who had four acres under nursery near Mt. Hope. Gathering these small purchases together I took them to Toronto on the schooner *Voller*. At this time I was still in the seed business in my old store on Yonge Street, where I also occasionally dealt in such fruits as were

* See vol. xi., p. 101.

obtainable in those early days. My intention was to make a purchase of some apples while in Rochester, but, being very scarce, the price was high, and I did not purchase.

I visited Messrs. Elwanger & Barry again in 1841, when they had their little field well planted with an assortment of fruit trees, from which I selected my first order to that firm.

In 1842, Messrs. Elwanger & Barry proposed a partnership with me in Toronto, this city being then considered a better centre for such a business than Rochester. We accordingly agreed upon terms, one of them to take charge here with me, and the other to continue the Rochester business. Our first field was twenty acres leased from the late Charles Small, which field now forms a part of the present grounds on the south side of Queen Street. In 1848 I purchased the interests of the other members of the firm for $5,000, they finding that their Rochester business was increasing so rapidly that it required the attention of both. In the early part of 1847 I sold out my seed business and turned all my energies and capital to the nursery, where my tastes had always led me. From a beginning of twenty acres my nursery reached fully 250 acres, while Messrs. Elwanger & Barry, by honesty, hard work and constant application have made for themselves a great name. It is wonderful what good may be accomplished by honest perseverance. Although I have grown old in the business my interests are as fresh as ever, and looking about this country almost from ocean to ocean it gratifies my old heart to know that my labors have to some extent helped to beautify and enrich many homes.

STRAWBERRIES TESTED AT THE AGRICULTURAL COLLEGE GROUNDS, GUELPH.

PROF. PANTON, in a bulletin, dated 15th April, 1889, gives the results of experiments made with ten varieties, grown in matted rows, on clay loam, as follows:

Wilson's Albany has done excellently and may be ranked first. It yields well and is a very suitable variety for shipping.

Crescent Seedling ripened sooner than Wilson, and has been quite productive, but there is a tendency among these berries to be imperfect, owing to incomplete fertilization of the flowers, but this is overcome by having a variety rich in pollen planted near, or among the rows. We overcame the difficulty by planting the Wilson side by side. Crescent Seedling seems to bear more pistillate flowers than staminate. The foliage of the Crescent, being somewhat sparse, does not assist in keeping the berry so clean as the varieties that grow more leaves.

Early Canada ripens soon, but is liable to be caught by frost, and on the whole has done poorly with us.

Arnold's Pride, is a clean, good-sized, nice berry, but has not been very prolific.

Monarch of the West proved to be a large berry, but only gave a fair yield.

Captain Jack was somewhat late, but very prolific and a good berry.

Alpha has been a slim bearer, but it has a delightful flavor.

Nicanor gave only a fair crop and ordinary berry.

Maggie's was rather small in berry, and as comparatively poor a bearer.

Cumberland Triumph is a large and irregularly shaped berry, with only a fair yield. It is a variety more for the amateur than one desiring to raise berries for market.

CONCLUSIONS.

1. Strawberries will do well in a locality such as ours, if the soil is rich, friable and well drained.

2. Ground for strawberries should have a good supply of plant food, be easily worked, and should certainly be well drained, kept clean of weeds and well cultivated.

3. We are inclined to favor growing in rows where large quantities are to be grown, and to renew the plants every two years.

4. In well drained, sheltered and good soil, planting out in September is advisable, so as to enable the plant to get thoroughly established. A fair crop next season may be expected; but if such conditions are absent, then plant in Spring and only a medium crop may be looked for

5. Strawberries may be grown in almost any climate if care be taken. Where the climate is severe protect the plants by scattering over them pea-straw or some other light covering. Avoid heavy substances such as manure; some place boughs with good results.

6. The following is a list which embrace varieties that are likely to succeed well:—Wilson, Crescent Seedling, Daniel Boone, Manchester, Sharpless, Alpha, Prince of Berries, Bidwell and Jewell. Crescent Seedling and Manchester, being poor in pollen, require such as Wilson among them. Sharpless is large, delicious, but somewhat late. Bidwell is a good family berry, sweeter and larger than the popular varieties, Wilson and Crescent.

FORESTRY NOTES.

By T. M. Grover, B.A., Norwood, County of Peterborough.

PLANTING TREE SEEDS.

IN the May issue of the Horticulturist, you give a letter from Mr. Hulee, of Nebraska, stat- his practice with tree seed to be a thorough soaking for five or eight days till every seed is fully sprouted, and not till then does he place them in the soil. Though I have never tried just this treatment, Mr. Hulee may be right. In the case of the large hard nuts, like walnuts, generally so slow to sprout, taking sometimes one, two or three years in the soil (and after we are done looking for them) before they come up, this

will render it practicable, as so many desire to plant the nuts just where the tree is to stand, even over a large plantation. Mr. Thomas Meehan, the well-known seed dealer and nurseryman at Philadelphia, in his price list says his method is to plant his seed very early in the moist earth, even while partly frozen, and trust to shading and natural dampness of the soil to sprout the seed, and he and many others say they never knew any good arise from soaking the seed. But by keeping the seed under treatment till the last one has shown sign of germination, and where we can see just what we are doing with them, and at the same time fully work the soil and keep down the weeds and by putting the seed in the clean soil just when ready to open its seed leaves, we would save great trouble and disappointment. The seed of white ash has a tough coat, and unless in very moist ground I find it very apt to lie two years, and a great many seeds are lost entirely. I find it useless to plant it in the Fall, as even if a few come all right, there is a great loss, and invariably some of the seeds, however planted, do not germinate till the second year. The weeds always start too soon for ash as well as maple seed, and if there is no other objection to Mr. Hulee's practice of soaking, I see so many advantages that I will try it in future.

THREE FAST GROWING TREES.

Ash, Locust, Catalpa.

The best growth I have yet seen in this climate is in the case of the Catalpa speciosa, and I regret that it is not quite hardy enough to be desirable here, as it is at the same time such a handsome and useful tree; it ought to be a favorite in the warmer parts of Ontario. One American paper counts it as a great advantage that its leaf is rather late in appearing in the spring—hardly in its favor, in my opinion. I do not care to see the bare limbs so long after other trees are fully out, and a good many of my neighbors who have a few trees have thrown them out, thinking they were dead, when, if they waited till June they would have found plenty of showy foliage. It is so easily transplanted, as well as raised from seed, if planted after the soil is warm, and its cultivation offers no difficulty to its general distribution. Frequently it will grow eight or nine feet, and I have doubt that, as is claimed for it in Ohio, it will produce a railway tie in ten years.

The yellow locust, very common and just as easily raised from seed, is nearly as rapid in upright growth, increasing in diameter a little more slowly. It offers no trouble in the nursery except that it is not quite hardy the first year, and is a most useful timber tree both for fuel and for manufacturing. It will grow from the seed to be three, five or eight feet high the first year, and transplants readily. It also is very late showing a leaf, and loses all its foliage very early in the autumn, and like the Catalpa, I do not admire it for an ornamental tree. Farmers do not like it from its liability to spread by sprouting from the root if wounded, as well as from its seed, the light legume being carried by the wind too easily. In foliage and limb it is

too thin to be much use for a shelter belt, but its timber has few equals.

The ash is well-known and is a little more trouble to get from seed, though transplanting just as readily. It is not generally called a rapid grower, but a two year seedling in fair soil will soon grow into a very handsome tree, very straight and clean in trunk and limb, and useful for street decoration or forest plantation and hardy enough for any climate. It is largely sold by the American nurserymen as a tree for timber claims and sent out at one or two years old, when it varies from one to three feet in height. It is said that some of them use the green ash, a more rapid grower, from a little further south, and sell them for white ash. I think some of them tried this on me, for one lot of seedlings supposed to be white ash, which I imported from the States, has turned out not to be quite hardy and freezes back nearly to the snow, which I know white ash should not do. The white ash of my own raising from the seed are straight, plump, and sound to the terminal buds with very solid root, and so are some imported seedlings; so I think if any of us find our ash seedlings suffer from frost, we may conclude we have not used the true white ash.

This ash is a tree of which no one can speak disparagingly—it cannot be abused for any defect in growth or habit and cannot be surpassed in vigor, beauty, or usefulness. What more do we want, except more of them?

SECOND GROWTH WALNUT.

The *Hamilton Spectator* of a late date quotes the following:—"United States Consul Albert Roberts, in a report from Hamilton, Ont., on wood and woodenware, says: 'Much of the imported walnut has been planted in the United States by men not yet old.' If Mr. Roberts will inform us in what portion of the United States the walnut he mentions as having been planted is cut, he will let in a side light on the lumber business that will be an astonisher. Somebody has been stuffing Mr. Roberts." (*Northwest Lumberman.*) and remarks "the walnut makes more rapid growth than hickory and large quantities or second-growth hickory are imported into Canada. We believe Col. Roberts to have been quite correct in his statement."

It is evident that Col. Roberts is mistaken, and the learned Editor of the *Spectator* a little out of his latitude too.

The *a priori* argument from hickory is just as absurd as it would be to predict an annual cutting of walnut from the example of the osier willow.

Second growth hickory used for spokes, handles, etc., in thicknesses of less than an inch can be got from very young seedlings. At the last meeting of the Fruit-growers Association it was suggested that walnut forty years old was only fit for repairing barns; for manufacturing, seventy to eighty years would be the earliest age, and, although I believe walnut is a most valuable tree to plant, and agree with the *Spectator* so far, I at the same time consider the *Lumberman* perfectly right that second growth walnut is not an article of commerce. There are no old planta-

tions where it could be got. For one thing, it is only an odd tree that can be heard of, as the walnut does not sprout as the hickory; it differs from hickory also, for the small hickory is the more valuable, whereas the elegant finishing wood for furniture, or such work as the Hamilton Court House where the meeting was held, must be over 100 years old. I hope the Editor of the *Spectator* will be able to attend future meetings of this Association.

NOTES FOR FRUIT GROWERS.

WE notice in *Popular Gardening* that Mr. Samuel Miller favors selling fruits in

SMALL TOWNS IN PREFERENCE TO LARGE CITIES.

He says:

"It is a mistake to think that the large city is the place to sell best. The reverse is the case. I live but one hundred miles from St. Louis, and have been growing fruit here for nearly twenty years, yet in all that time I only sent five consignments of ruit there, and each time received less for it than in the smaller towns in the interior of the state. Neither was my fruit of inferior quality, for I don't send that kind. Plant good varieties, cultivate well; don't let them overbear; then sell as near home as possible, avoiding express charges, commission, etc. As a rule, these two items take half of the receipts, while the grower has to raise, gather and pack for the other half. The man who can devise a plan whereby the grower can obtain what he earns in growing fruit, will deserve a monument."

There are some good points in the report of Mr. Curtice's address on

THE CANNING INDUSTRY

at the meeting of the Western New York Horticultural Society. He said that growers and canners must work hand in hand, as their interests are identical. Only white cherries are generally wanted for canning, especially Bigarreau, Spanish and Napoleon, or any good-sized fair meated sort, of the red acid sorts. Montmorency is good, had paid 14 cents per pound for them. He knows of a single cherry tree having yielded $80 for fruit in one year. Plums pay the grower well. He has paid from $5,000 to $8,000 a year into the little town of Webster for plums, and yet there is nothing that might be called a plum orchard. Imperial Gage, Monroe Egg, Reine Claude, and a variety he only knows under the name of "Mottled Egg," are the ones used for canning. Prunes are too high for canning purposes. German prunes average $3 a bushel. Prefers the Bartlett to all other pears for canning. The supply of fine quality in fruit does not keep up with the demand, and the canners have hard work to get such fruits as they want. The persistent grower of superior fruits will be successful financially, and need not to be discouraged by the cry of low prices and overproduction. Canners want an acid, firm strawberry, and the Wilson is now the only one used. Of red raspberries, Cuthbert is as good as any. The demand for Quinces is rather limited, but for good Western New York peaches there is no limit. Growers should not confine themselves to Early Crawford, as it lasts only a short time. Any large, yellow-meated

peach is good, Wager, Allen, Foster, etc. By planting these varieties besides the Crawford, the season can be greatly extended. The Crawford, however, is best in flavor. Of currants, the Dutch is highest flavored and best for canning. He pays 4½ to 5 cents a pound in the average.

Regarding the

DISPOSAL OF FRUIT

to the best advantage, the following remarks of Mr. J. N. Stearns are worth quoting:

"I received in Chicago $3 a keg for my pears the past season, a keg holding a trifle over one bushel. For the past two or three years, however, this market has been so flooded with almost worthless fruit that growers are beginning to be discouraged, and so we have the query: 'What shall we do with our fruit?'

"As one of the means of securing this trade, I sent small consignments of fruit to reliable dealers in small towns with my card, guaranteeing the fruit select, placed in each package. I find plenty of consumers who prefer to purchase of the producer at an advanced price, expecting of course to get what they pay for. It should be remembered that fair treatment will hold a customer.

"I have been engaged in fruit growing as a business for many years, and never with more satisfaction to myself than at the present time. I find the demand fully keeps pace with the increased production."

PINCHING BACK THE CUTHBERT CANES.

A writer in the *Country Gentleman* says:

"I have just finished trimming a row of Cuthbert raspberry bushes which, partly at Mr. C. Mill's suggestion last year, I left untouched until now. There is a decided contrast in appearance between it and the rows pruned according to the method I practice, namely, pinching the new canes before they reach three feet in height, and shortening the laterals to nine or ten inches when clearing out the old wood, which is done as soon as it is convenient after the berries have been picked. The Autumn-trimmed canes resemble bushes with six or seven short, well-seasoned branches of the size of a lead pencil; the Spring-pruned ones are simply bare poles. I have counted the buds on half a dozen canes of each kind of pruning, and the bushy ones average sixty-three buds, or five to seven laterals to a cane, while those without laterals average eighteen. With the exception of just the tips of a few late-growing, unpinched laterals, no injury was done by frost, and as to winter-killing generally I do not think either way of pruning has an advantage, certainly not in this section. The canes on which the buds were counted are marked with tags, and I shall weigh or measure the fruit on each to satisfy myself which plan is best. Pinching the canes when young I think has a tendency to produce laterals at the head, making the bushes top-heavy when loaded with fruit, and consequently more liable to be blown or beaten down by severe storms, as was the case on July 10th last year; but where properly supported or fastened to a wire the berries are out of danger of being covered with dirt or grit during heavy rains.

"Each succeeding year that I grow the Cuthbert only increases my liking for it, and did it ripen ten or twelve days earlier I should consider it the most reliable and profitable red raspberry grown."

HOW TO MAKE THE ORCHARD PAY.

Dr. Hoskins writes in *Vick's Monthly* as follows:

"I have never yet seen an orchard too rich for profit, or one upon which the last load of manure did not pay the most profit. An orchard of the Williams' Favorite Apple in the vicinity of Boston is kept 'as rich as

a barnyard.' The fruit is double what might be called the normal size of the variety; every apple is handled like an egg, and is got in the market at just its point of perfection. This orchard, though small, is very profitable. The only orchard to rival this that I have seen is in the City of Montreal, where some seven years ago the fruit of thirty-six trees of Fameuse was sold, ungathered, that season for $800. They were all very large and perfectly healthy trees which had, all themselves, almost an acre of rich land."

FLORICULTURAL.

Pruning Roses.

THE low bush or dwarf form is the best on all accounts for our so-called hardy Roses. The shoots that grew the previous year should be cut back in early spring to six inches or a foot from the ground. From these stems that are left will be new shoots which will bear the present year's bloom. In all cases the shoots that flower start from the wood that grew last year, and the object of pruning is to keep this new growth down close to the ground, and to regulate the amount of bloom by the quantity of last year's growth that is allowed to remain. In spite of the best of pruning the tendency of the plant is to make its new wood higher up each year, but the skilful pruner will attend to this, and not allow his plant to get up too far; a shoot sometimes starts voluntarily, or if not, it can be forced out low down, and advantage is taken of it to renew the whole plant, cutting away all the older growth above it. Thus, with a little care, the Rose bushes can be kept low, and in this form they are easily sheltered in winter, easily syringed, and their flowers are produced where they are best displayed. The yearly care required for a dozen Rose plants in the garden need not exceed twelve hours—an hour apiece.

These remarks about pruning apply to the most popular kinds of Roses, those commonly cultivated, the Hybrid Perpetuals and Mosses. It would not do to prune so closely the hardy Yellow Roses and the climbing Prairie Roses. But the general principle of shortening in the growth of the previous year applies the same to these. The little Polyantha Roses, also require to be well cut back, every spring.—*Vick's Magazine.*

That Garden Long Ago.

I REMEMBER, I remember
A garden, long ago;
'Tis not laid out in modern style,
In curious bed and row,
And only sweet, old-fashioned flowers
Grow freely, gaily there,
And make a mass of glorious bloom,
And perfume all the air.

Along the narrow gravel path
The violet Iris grows,
And on each side a Snowball bush
And royal Damask Rose;
While Hollyhocks, and Four O'Clocks,
And Pinks, and Poppies glow
In every nook and corner
Of that garden long ago.

I remember, I remember
The branching Lilac tree,
Its fragrant purple blossoms
So oft in dreams I see!
Once more I stand in wonder
To see the primrose blow;
Ah, these are only mem'ries
Of that garden long ago.

—F. A. REYNOLDS.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

THE PLANT DISTRIBUTION. — Owing to the very rapid advance of vegetation this Spring, it was found impossible to fill the last orders received with any prospect of giving satisfaction. We therefore ask those who have not received their plants this Spring to have the kindness to wait until next Fall for them. The same list will be continued for the Summer, so that subscribers sending in their names may still select from it.

THE CRANDALL CURRANT.—We wish it to be plainly understood by our readers that we do not endorse anything that has been said in these pages concerning this currant, and that the writers are alone responsible for the statements made. The Crandall is quite a new thing, and as in the case of all novelties we desire as quickly as possible to test it on our own grounds, and to receive the testimony of planters from all quarters. Our object is to defend the interests of the growers of fruit, and not to boom any nursery stock. Now, while Mr. Summey's experience with this currant seems to have been favorable, the experience of some horticulturists at Rochester, expressed to us personally, is adverse, to the effect that it is a poor bearer, and that its peculiar odor is serious fault. We await further testimony with interest.

THE NEWTOWN PIPPIN. — An English correspondent of the *Garden and Forest* writes in high praise of the Newton Pippin, an apple which we well know brings the highest price in the English market, sometimes selling for as much as $7 per barrel. He says that in point of flavor he considers it the best apple in the world, and wonders that so little is said of it in our journals, and that we do not value it more highly than we do. He does not know of a single apple in either France or England which can compare with it in high flavor and lasting quality.

Now, as applegrowers, we certainly do wish to plant and grow only the very best kinds, and we know that this apple stands at the head of all apples, but we have also long ago found that it is a failure in the apple regions of Ontario and New York on account of the apple spot (Fusicladium), to which it is particularly subject.

If, however, the use of hyposulphite of soda or of copper solutions should

prove reliable as remedies for this dreaded plague of our apple orchards, we may yet grow the Green Newtown Pippin as our best Winter apple, the Fall Pippin as our best fall Apple and the Early Harvest as our best summer apple.

School Grounds is the subject of the editorial in a recent number of the *Garden and Forest*, in which the editor commends Mr. Chase's suggestion that prizes be offered for the best kept and most tastefully embellished school grounds. Would it not be even better if the Government would give a special grant to every school for excellence in this way, the amount to be based upon the approximation to some high standard of excellence which should be designed anew every year by an expert, and distributed among the trustees or teachers of each section. One very important feature in planting school grounds is the educational; they should teach not only the proper disposal of walks and lawns, and flower beds among trees and shrubbery, but also some knowledge of our native trees themselves, and with this in view it is a mistake to plant too many of a kind. We think that each returning Arbor Day it should be the rule that no tree be planted which is a duplicate of any already growing on the school grounds, and thus, with a proper system of labeling, our school grounds would soon become a place where our children would become familiar with the characteristics of our many varieties of forest trees almost without any mental effort.

Rural New Yorker No. 2 Potato has been tested at the Michigan Agricultural College, and is thus described :—

In form, nearly as broad as long and flattened. Skin, white; eyes, few and inconspicuous. Generally very smooth and regular, although an occasional prong manifests itself. Flesh, very white and mealy when cooked. This potato is quite productive and is an extremely valuable variety. Had it been grown under better conditions it might have headed the list. Well worth planting.

The Purple Leaved Beech.—The *Garden and Forest* advises grouping this tree with beeches of the normal hue, or failing in this, with the Horse Chestnut, or the Scarlet Maple. Grouped with the White Pine or Norway Spruce, its effect would be ruined. As a general rule, however, it is better planted as a single lawn tree, where it attracts much attention on account of its peculiar color and beautiful symmetrical form.

Ocean Rates for Apples.—Mr. George Thom, of the Beaver Line, sends us a sailing card, and quotes the rates for apples to Liverpool at two shillings and sixpence, or about 60 cents.

The Woodpecker.

Mr. Nicol's article on the Woodpecker, page 95, calls forth the following comments from the Orillia *Packet* :—

How mortifying—after your little friend has flitted away on his kindly errand—to take up the April number of the Canadian Horticulturist to find all your pretty theories knocked into a cocked-hat. Your favorite, with the red top-knot, is also a sap-sucker; and while he has been gammoning you with the idea that he has been catching insects, he has, in reality, been boring holes and sucking the sap—nay, the very life—out of your white birches; every hole he makes being, so to speak, "a nail in its coffin." This places you on "the horns of a dilemma," and the notion of a full grown man or woman being put into such a degrading position by a six-inch-long woodpecker, or sap-sucker, seems absurd, but shows what mites we are with all our swaggering. You can't "eat your cake

and have it"; that is to say, you can't let your woodpecker eat your white birches and preserve him and them! *Happy thought*—blaze away at him with blank cartridge and keep him on your neighbor's lots, so as to be able to admire him over the fence! Not a bit of good, my dear Madam or Sir. After fifty shots or so he will begin to enjoy the fun; will bring over his whole family, and will encamp on your premises for the season. Several sleepless nights of thought will make you decide to shoot him, using fine shot so as not to injure the bark of the tree; but when you have killed him you cannot—as a self-elected member of the Audubon Society—wear him on your hat as an ornament. If however—waiving all considerations—you determine on so doing, you will be perpetually haunted by a fear that he might resuscitate himself and peck a little hole in your head to see what is inside. Supposing that he did and found sap instead of brains; where on earth could you "hide your diminished head?" and Echo answers —where?"

Peach Yellows.

Now that this mysterious disease is being made a study by so many practical and scientific horticulturists, we hope that some solution will be forthcoming, and an effective remedy discovered. We have already referred to Prof. Erwin Smith's elaborate preliminary Report, which shows clearly the symptons of the disease, and the history of its distribution, but nothing definite concerning its nature; and also to the theory held by several cultivators in Massachusetts that it is a result of true starvation, for want of a sufficient supply of potash, and that by liberal applications of this substance the tree can be saved. Now we have another theory, this time from Virginia, by Mr. W. H. Massey, who says he believes the Yellows is caused by the black aphides upon the roots. These, he claims, destroy the small, hair like appendages of the roots, and thus interfere with the absorbtion of a sufficient amount of those mineral matters upon which the perfection of the assimilative substance in the foliage depends, and a yellowish, sickly color is the result. He claims that of a large number of affected trees examined, he has never found one which was not covered by millions of black aphides destroying every young and tender rootlet.

Let our peach growers give this matter their attention and report the result.

Canning Fruit.

As the season for Fruit Canning is again at hand, the ladies who read this journal may be interested in the following table from an old paper:—

FRUIT.	TIME FOR BOILING	SUGAR TO THE QUART OF FRUIT.
Cherries	5 min.	6 ounces
Raspberries	6 "	4 "
Blackberries	6 "	6 "
Strawberries	8 "	8 "
Plums	10 "	10 "
Whortleberries	5 "	8 "
Pieplant	10 "	8 "
Sour pears (whole)	30 "	4 "
Bartl't " (halves)	20 "	6 "
Peaches (halves)	8 "	4 "
" (whole)	15 "	4 "
Pineapples (sliced)	15 "	6 "
Crab apples	25 "	8 "
Sour apples	10 "	5 "
Ripe currants	6 "	8 "
Wild grapes	10 "	8 "
Gooseberries	8 "	8 "
Quince (sliced)	15 "	10 "
Tomatoes	20 "	* No sugar

*But one-half teaspoonful of salt

The Plum Curculio.

Experiments in progress at Champaign, Ill., go to show that this insect feeds upon the plum leaf, both by eating and sucking. It has little choice between the plum itself and the plum leaf, and also feeds upon the blossom and the leaf of the peach

tree. The important point to be noticed in all this is that the curculio begins its work long before it stings the young fruit, and therefore the wisdom of the advice which we have frequently tried to impress upon our readers to spray the plum trees very early with Paris green, even before the blossoms are fully expanded.

It has also been found that spraying the peach with Paris green of the ordinary strength will kill the peach leaves, but that an application of the poison in a more dilute form is sufficient to destroy the curculio. In an experiment tried in the early part of May of the present year, out of a cheque lot of twelve curculios fed on peach leaves without poison, only one died; but out of twelve fed upon leaves sprayed with Paris green, all died in ten days.

QUESTION DRAWER

The Saunders Plum.

43.—There has been a person around here selling plum trees, which he calls "The Saunders," for the *moderate price* of $2. Please give the merits and demerits of this new claimant for public favor through that very valuable paper, "THE HORTICULTURIST," the exposer of humbug and fraud. —R. TROTTER, *Owen Sound.*

The Saunders Plum is no fraud, but was brought before the notice of the Fruit Growers' Association of Ontario at their Autumn meeting in Barrie, in the year 1884, and was named after the then President, Mr. Wm. Saunders, now director of the Central Experimental Farm. It was sent in by Mr. John Arris, of Belleville, as a seedling which had attracted no small attention among fruit growers in that vicinity. It was then described as follows:—Tree, a good spreading grower; foliage, of a bright green color, holds on well to the end of the season; a very valuable point. It bears an immense crop every year, the limbs this year (1884) were just bending under the weight of fruit. The fruit is above medium in size; form, longish oval with a distinct suture; stem, one half an inch long; color, bright yellow with a slight blush where exposed to the sun; flesh, melting, sweet and good; free stone; flesh, yellow. This plum, on account of its hardiness, productive habit, good growth and freedom from black knot, will stand in the front rank as one of the best market plums. It is one of the first to ripen, being several days earlier than the Green Gage.

Of course the price is extravagantly high, and is asked only on the ground that the variety is comparatively new, and difficult to buy except from an agent. Probably the nursery represented by the agent has secured a monopoly of the stock, and so controls the market for a time. We suppose that no one of our readers would pay any such price for a plum tree, except as a luxury; trees for a commercial orchard can usually be purchased direct from the nursery much cheaper than through an agent.

Apple Evaporator.

44.—Is there a sheet iron apple drier made in Canada to set on the stove for family use? —THOS. RICKARD, *Alvinston.*

We do not at present know of any such dryer made in Canada, but R. Ferris, of Essex Co., N. Y., describes a Home Made Evaporator in the *Farm and Home*, which might suit the requirements of our correspondent. He describes it thus:—

A HOME-MADE EVAPORATOR.

I secured a box two feet long, 18 inches deep and two feet high. The

cover was missing, so I inverted it, making the bottom answer for a top. I removed one side, cleating the pieces together near each end and put leather hinges on, fastening it to the former bottom, but now the top of the concern. At the loose corners I nailed on an inch-square strip to hold them firm. Inside, on each of the ends I nailed half-inch strips, two inches apart, as slides for the trays to run upon. The trays were made of strips of half inch stuff, one

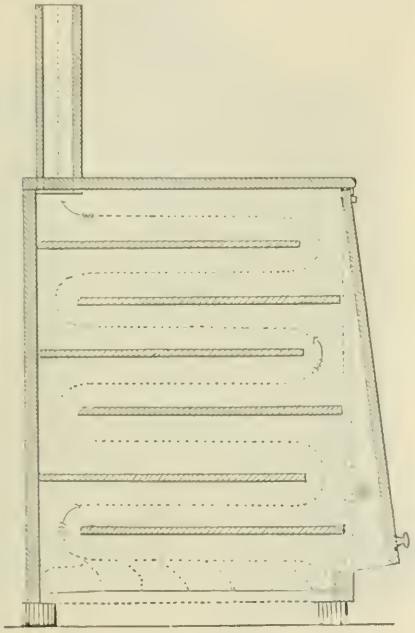


Fig. 47.

inch wide, halved in at the corners and braced by diagonal wires. They are covered with white mosquito-netting.

At the top and side furthest from the door hinges, I removed a piece of the top two inches wide. I then made a chimney two inches wide, two feet long and a foot high, which I placed over the opening and nailed fast. After supper, when the evenings are long, we all set to work at the apples, and putting a few pieces of wood in the stove, begin filling the trays, the lowest first. As the second tray is prepared, the first one is moved up and the new one put in next to the fire, until the evaporator is full. The evaporator is placed on four pieces of brick, stood edge-wise on the stove at the corners of the machine. The apples dry off the first evening to some extent, and when the work is done up the following day the evaporator may be lifted on again, and by evening the fruit is ready to put away.

My method of cutting apples is to peel, and take off two slices from each end, then core, and slice the remainder to a thickness of one-fourth of an inch. The trays should be made one or two inches narrower than the box and arranged so that the hot air is driven from front to rear and back again as in the sketch, which gives a sectional view of the evaporator. The door is hung at the top as shown, but should be kept closed except when putting in or removing trays.

A Cook Stove Dryer is shown in fig. 48, which is sold for $7, and only weighs twenty-five pounds, but this is made in Waynesboro, Pa. For those farmers who have large orchards and wish to go largely into the evaporating of fruit for market, we may mention that we are just in receipt of a catalogue of Fruit Evaporators, from Cincinnati, Ohio. They are made in six sizes and impress us favorably. No. 3, fig. 49, weighs 600 pounds, and its capacity is 15 to 20 bushels of apples per day; it has a furnace with grate for coal, and will also burn cordwood. It is catalogued at $100.

Gooseberry Maggot

45. Is there any remedy for the gooseberry maggot? Some insect lays an egg in the berry, when about two-thirds grown, causing the berries to fall to the extent of one-third or more of the crop. The Downing is most affected. I have carefully watched for something on this pest, in vain. The worm

when full-grown is about a quarter of an nch long?—W.E.P.

Mr. Saunders, in his work on "Insects Injurious to Fruits," describes two which injure the fruit of the gooseberry, viz:—The Gooseberry Fruit Worm, the eggs of which are deposited by the parent moth on the young gooseberries soon after they are set, and the young worm which grows to a length of about three-quarters of

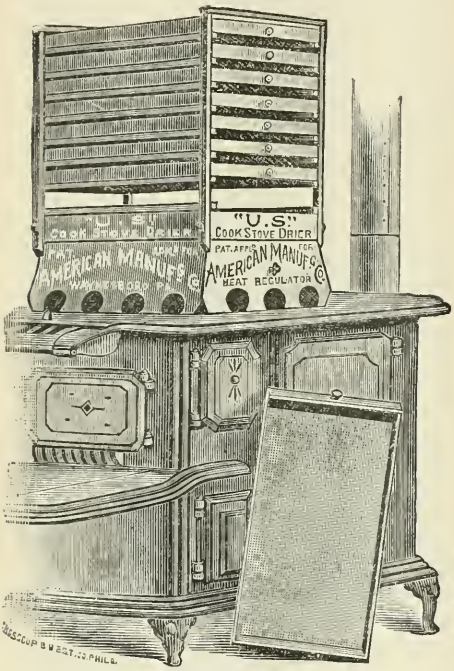


Fig. 48.

an inch, burrows into the young fruit. The latter soon indicates its presence, either by discoloration or by premature ripening. The other is the Gooseberry Midge, a two-winged fly about one-tenth of an inch long, which deposits its tiny eggs within the young gooseberry. These develop into very small *yellow larvæ*, resembling the wheat midge.

Without seeing a specimen we cannot determine what insect our correspondent refers to; but, in any case, Mr. Saunders' plan of gathering and burning of the premature fruit would help to keep it in subjection.

We would suggest spraying with Paris green and water, while the fruit is very small, and believe it would be the simplest and easiest mode of ridding the bushes of the pest. We should be glad to hear the result of such an experiment.

Forms of Potash.

46. You will oblige if in an early number

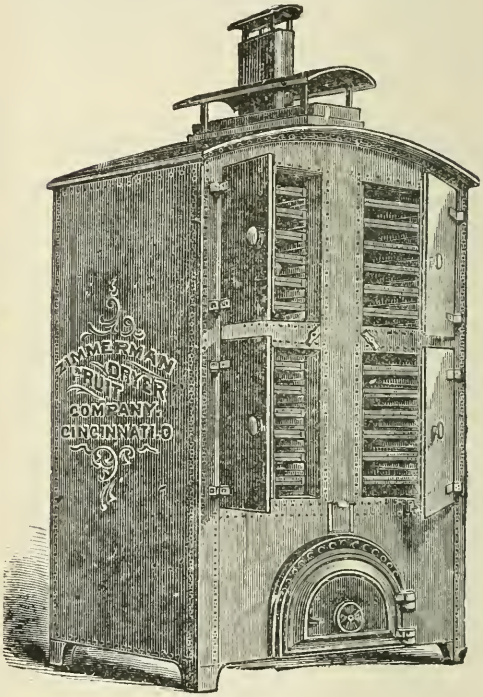


Fig. 49.

of the Canadian Horticulturist you will give an account of the different forms of potash, similar to that you gave on nitrate of soda. I wish to get at the best form to apply to the soil, where wood ashes cannot be got. Prof. F. Panton, in last year's Report of Fruit Growers' Association, gives what he says are two good mixtures for fertilizers, but he takes wood ashes as the foundation. Now, it is very hard to get good wood ashes in the town where most everybody burns coal. Any information as to the next best thing will oblige, I believe, many others as well as W.M., *Oshawa*.

Reply by Prof. J. H. Panton, O.A.C., Guelph, Ont.

Potash is employed as a manure in the form of *wood ashes;* the *ashes*

of cotton-seed hulls; the *green sand* of New Jersey; *sulphate of potash; chloride of potassium;* and as "*pot-ashes*," usually a mixture of hydrate of potash and carbonate of potash.

A chloride of potassium, known as "muriate of potash" has been largely used as a fertilizer, so also sulphate. The latter has been preferred; but on the whole the results are not so successful as where wood ashes can be secured. Next them may be ranked the so-called "Potashes," a mixture of hydrate of potash and carbonate of potash. This fertilizer is likely obtainable where fertilizers are sold. It is common among American dealers, and sold in considerable quantities.

The Russian Mulberry.

47. I AM much pleased with the improved appearance and management of the CANADIAN HORTICULTURIST. I hope you will meet with corresponding encouragement. Had two fine Russian Mulberries last year just come into bearing. There were a few small berries on each but scarcely worth the name, although I had believed the one was staminate and the other pistillate. They were distant ninety-six feet from each other but one half of each tree intercepted from the other by the interference of a corner of the house. Was obliged to cut down what I believed to be the pistillate. Would it do to graft the staminate one with Downing mulberry? Would it produce fruit?—A SUBSCRIBER.

Undoubtedly the Downing mulberry, where it succeeds, is far superior to the Russian varieties which had only their hardiness and vigorous habit to commend them. You might possibly succeed with grafting the Downing upon the Russian variety, but it is not very probable as the tree bleeds badly when cut. You might succeed with budding upon some of the young wood as soon in Summer as you can get well-developed buds.

Cuttings about two feet long, planted in Spring, in a moist, shady spot, are likely to grow, if taken from matured wood of the previous Summer's growth, and a small piece of two-year-old wood attached. Only one or two buds should appear above ground.

Hydrangea Culture.

48. I WILL be thankful for a few hints on Hydrangea culture. Mine bud, but not one quarter of the buds mature?—MRS. WM COOK.

Hydrangeas are of easy culture, and you should have no trouble in getting abundance of bloom. One very important point is to give them plenty of water when growing; and perhaps this was where you failed. Another is plenty of air and sunshine, and a third, is rich soil, such as might be prepared by mixing equal parts of loam and decayed cow manure.

Tuberous Rooted Begonia.

49. DOES the tuberous rooted Begonia require any special treatment.—JOHN S. WARREN, *Orillia.*

These are of easy culture. They require plenty of water during time of growth, and good rich soil in pots, similar to that recommended above for the Hydrangeas. When the season's growth is over, water should be gradually withheld, until the tubers are ready to be taken up, and packed away in dry sand until needed again.

To Drive Away Black Ants

50. CAN you tell us of anything that will effectually destroy black ant hills in the lawn We have tried salt, lime, sulphur, coal oil, hellabore, and only succeeded in killing out patches of grass?—MRS. WM. COOK, *Carrville.*

A good many ways have been suggested of destroying the ants and stopping their work on the lawns. For destroying them in the nest, an application of boiling water is recommended; also a liberal dose of hot alum water, made in proportion of one pound of common alum to three gallons of rain water. Bottles of sweetened water sunk in the ground near the hills make good ant traps.

They may also be poisoned by spreading about molasses, poisoned with Paris green, or cyanide of potassium.

For trapping the ants, a sponge moistened with sweetened water may be used, and when black with ants throw it into boiling water. Fresh bones may be used in the same way.

A Pear Tree Beetle.

51. FOR the past three years our pear trees have been infested with a broad-greyish-brown bug about the time the fruit begins to ripen. Can you tell us a remedy for them? —MRS. WM. COOK.

It would be impossible to identify an insect from such a brief description. Can you not send in a specimen this Summer?

The Indian Cetonia is a beetle a little more than half an inch in length, with a broad body. The second brood appears in September, and burrows deeply into the ripe fruits and inducing decay. For it, the only remedy suggested is "*Catch 'em and Kill 'em.*"

Duty on Garden Seeds.

(SEE QUESTION 35.)

With reference to this, Mr. G. F. Fawcett, Customs Department, Ottawa, gives us the following list of transfers to the free list.

Green fruits, and edible berries in their natural condition, viz:—Bananas, Olives, Pineapples, Plantains, Tamarinds, Apples, Blackberries, Gooseberries, Raspberries, Strawberries, Cherries, Cranberries, Peaches, Plums, Quinces, Apricots, Lichi-fruit, Mangoes and Melons, Pomagranates, Citrons, Tomatoes.

Seeds, viz:—Anise, Anise-Star, Canary, Caraway, Clover-grass and Flowers, Cotton (crude), Cardamon (crude), Chia, Jute, Mustard, brown and white, Sugar-beet, Seeds of fruit trees and forest, (not edible,) Sesame, Sugar-cane, Anise-Star, Cummin and Tonquin Bean.

Plants, Trees and Shrubs, viz:—Apple, Peach, Pear, Plum, Cherry, Quince and all other fruit trees, and the budded stock of the same: Gooseberry, Raspberry, Blackberry, Currant and Rose bushes, Grape Vines, Strawberry Vines; Shade, Lawn and Ornamental Trees, Shrubs and Plants.

London Purple.

52. I NOTICE some advise London purple as safer to use and quite as effectual as Paris green. Which do you advise?—A. RONALD, *Minesing.*

So far as the safety is concerned, we see little advantage in the London purple, for it, as well as Paris green, is a deadly poison.

Both contain arsenic, and the greatest caution should always be exercised in handling either one. London purple mixes with water better than Paris green, indeed, the latter is not soluble in water, and is only held in suspension by frequent stirring, and in this respect the former is preferable. In strength, however, the Paris green is the more reliable, because it is a chemical compound of constant strength, being an arseniate of copper, and containing about 60 per cent. of arsenious acid. London purple on the contrary is an arseniate of lime, a refuse product from the manufacture of aniline dyes, and varies in relative proportions of arsenic and lime which it contains. Generally speaking it contains about 43 per cent. of arsenious acid and about 21 per cent. of lime. Great care should be taken, however, to secure a pure article of Paris green, as there is a great deal of adulteration practised by vendors. As to price of Paris green, a pure article should be got for 25 cents per pound. Mr. Fisher, of Freeman, writes he can buy it in Hamilton, in 50 pound lots, for 18 cents per pound, guaranteed pure.

OPEN LETTERS

A Letter from Russia.

(Original in German.)

To the Editor of THE CANADIAN HORTICULTURIST:

SIR,—Latterly, America has made so much progress in fruit growing that soon the centre of that important culture will not be in Europe, but in America, as it is already in some branches, *e.g*, the cultivation of berries. For this reason I make an effort to know the prominent growers in America.

I write you because your journal holds the first place among European growers, and your position in North America interests us very much.

I offer to exchange stock with you, not that I need them for myself or for sale, but because I and some of my friends have experimental farms in different parts of Russia for testing the hardiness of various fruits besides the apple.

For this purpose we need trees correctly named, and wish to get these not second-hand, but direct, for which we will pay either cash or Russian fruit trees. We wish to deal with only one or two persons in America, and as they may not have everything which we require, it would be necessary that the lack be supplied by them from nurseries or from other fruit growers. I require:

1. Twelve kinds of the best American pear (the new varieties, Idaho, Leconte, etc., not excepted); 100 trees of each kind.
2. Twelve varieties of the best American peach; about twelve trees of each kind.
3. Six varieties of the best American plum; twelve trees of each kind.
4. Six varieties (my choice) of the American blackberry.
5. All the American raspberry; twelve roots of each kind.
6. Some American gooseberry.

The efforts of Dr. Budd, of his associates, and of those interested in the Russian apple in America, are not without influence in Russia. This has directed greater attention to the native fruit. The 200 kinds of apples which until then were considered the original varieties, are well known and increased. Well known growers have explained to us, apart from local naming, the difference in variety. There is better order in this branch than at the time when Dr. Budd was here and advised only by Dr. Regel in St. Petersburg, a distinguished botanist, but mediocre grower. Many better varieties of apples have been found which are not known in America, and also some good winter pears; also the "Mutter baume" of the same variety, which stood the unusually severe winter of '66-'67. These kinds are only 6-8.

In exchange I offer the following:

1. Six varieties of the best winter apples; about 100 or more trees of each kind Among these is the Stem Antonooka—not that tree commonly known in America as Antonooka, which is also wrongly called Queen of the Steppes, because this only in northern climates will bear good fruit, and not on the steppes.

The Stem, or Ruddy Antonooka, is more hardy and better flavored than the green.

2. Twelve of the best new Russian apple varieties, about 100 or more of each kind. Among these is also the beautiful new orange-hued Sommerkalivre aus Okuo, the famed "Lindenappel," which ripens early.

3. One hundred trees of a good "*bessar abischen*" Russian apple, of which I export largely; large (similar to the Belle de Poutois des Remy), hardy, unusually well flavored and juicy. The tree grows very large and lives over a hundred years.

4. One hundred or 200 trees of the hardiest and finest apple of Southern Russia—Linop or Linap, unsurpassed for shipping Before there were any railways in Russia the Linap was the only apple which we could send overland by way of Archangel. The fruit does not rot and keeps for a couple of years. We thought that this tree, which is beautifully cone-shaped, would be well received. This tree in Central Russia has stood 28° well. It bears every year.

5. Two of the best "Kaukasischen" apples.

6. Two new fine winter pears found in Litan, etc.

When we fully understand one another and enter into negotiations, I can send you each year tested and really good specimens which are suitable for America. Of these we have still a large stock. If you are disposed to accept my offer, answer, if possible, at once (as we must understand one another fully), how and when I shall send the trees, and through whom I'll receive the American stock. As it takes six weeks for a letter to reach America, we can exchange but few letters before Autumn. In case the editor or one of the subscribers is not able to accept my offer, I beg you to hand this letter to one of the large nursery firms in the Northern States or in Canada. I would prefer the latter Now and again I can send to your estimable journal articles on fruit and vegetable novelties (in the latter we have splendid specimens), but you must translate and arrange these in English. This I know only in theory.

Continue to send me the paper which you have so kindly sent. I do not subscribe for this year only. Could you send me the whole issue of 1888? You will tell me to whom I ought to send the money. If you

wish I can pay it to Stadelmayer, a bookseller in Odessa, who has business connection with a German book firm in New York, H. Herger & Co. In any case send me THE CANADIAN HORTICULTURIST. You may make extracts from my letter for the HORTICULTURIST if you think they would be of interest to your readers.—T. NIEMETZ, *Kaiser Russ. Staatsrath.*

Address: Taroslaw Niemetz, Staatsrath, Odessa, Tamskaia Str. Realschule.

Fruits in Simcoe County.

SIR,—The past Winter has been the mildest and most favorable for all kinds of fruit trees that we have had for many years. Apple trees never came through a Winter in better shape, and plums and pears are also in good condition. The same may be said of the small fruits. Strawberries wintered well without any protection except the snow, which however, laid very evenly on the ground all Winter. And the Cuthbert raspberries are alive to the very tips, a rare thing for them, for they generally kill back to the snow line. The weather of last year had something to do with this, for the drouth of last Summer and the early and severe frosts of October stopped the growth and caused the new wood to mature and ripen well before Winter set in. We have every indication at this time, (May 16th,) of a fair crop of fruit. But there is yet a danger of frost, as this spring is at least three weeks earlier than usual. The blossoms are as far advanced now as they were last year on the first week of June. Some varieties of apples which have a tendency to overbear one year and skip the next, such as Talman Sweets, will not bear much this year. But regular bearers like the Golden Russet are showing an abundance of bloom. I believe that if people would plant more Russets and less of other kinds there would be no dissatisfaction as to the profits of the orchard. I consider it one of our hardiest trees here, and a long lived and regular bearer, and one that will always command a good price; with careful handling it can be kept till May or June. I believe it is the large quantities of inferior fruit that is grown that gluts the market and keeps prices down, and I don't believe there is any danger of our growing too much first-class fruit. I would like to impress upon those who live in the colder parts of Ontario the importance of planting seed and raising seedlings, on which to top-graft the varieties of fruit that are too tender to stand the climate otherwise.

I know by experience that this is the most certain way to succeed in growing the more tender varieties of plums and apples. For instance the King, and the Greening will not stand here as a nursery tree, but when top-grafted on our native seedlings they grow well and produce even finer specimens of fruit than when grown farther South as nursery trees. The same may be said of plums. I have produced the finest samples in this way. Every farmer's son should learn to graft and have the necessary tools and a supply of wax on hand every Spring. Thus they will become interested in this work and have a keen relish for it when they see what wonderful results they can achieve. —G. C. CASTON, *Craighurst.*

On the Destruction of Moths.

TAKING a stroll on a fine Summer's evening along one of our principal streets to view the electric lights, which were recently erected, my attention was attracted to a large swarm of moths gyrating around the brilliant light, similar to that observed when a swarm of honey-bees, when emerging from the parent hive, previous to settling down. I was informed that the glass globes were almost filled with them every morning, frequently obscuring the light. No doubt those living in the vicinity having fruit trees, will enjoy an immunity from wormy fruit, which, unfortunately, was rather abundant in the neighborhood of late. On a smaller scale, but equally effective, is the burning of lamps, inserted in a basin of water. Moths are generally of nocturnal habits, the mischief is usually done during the first part of the night. They are, however, easily attracted by a bright light; even an open flame is attended with good results, many will incautiously drop into it.

I have found very satisfactory results follow by trapping insects of all kinds that are of an injurious character, by suspending wide-mouthed bottles, such as those used for pickles, half-filled with a mixture of water and vineger, from the lower limbs. In a short time you will be astonished at the number thus destroyed.—SIMON ROY, *Berlin.*

A Mistake.

SIR,—It is with pleasure that I renew my subscription to the CANADIAN HORTICULTURIST, as it is the best dollar's worth I get in any way. I followed my trade in London as a cabinet and chair maker; every spare moment I was in the garden, so of course I had a good garden. My love for it made me come here where I could get cheap land. I have fifty acres, of which eight is cleared, twelve partially, and the balance rough bush, with no good lumber left. The land is good, compared with that about London, but it is full of thistles, and generally dirty, besides the fences were all worse than bad, so that to me it has been a very dear place. The cattle destroyed nearly everything I grew last year; for both cows and pigs run the road at large. The place would be dear to me rent free; indeed

six clean acres would be better, if well fenced. I have spent all my money, and earned nothing. I borrow the dollar I send.—SAMUEL PEDDLE, *Whitechurch, Ont.*

Had our correspondent followed the advice of this journal, he would not have left a good trade to engage in fruit culture. To succeed in any line one must have a thorough knowledge of it, and it would be a marvel if any person in these days of close competition, could make money in fruit culture without any previous training in the business. Would our friend advise a farmer to leave his farm and try to make a fortune at cabinet making? No more do we think that a tradesman should leave his trade, and expect to make money in fruit gardening without either capital, or knowledge of the business.—EDITOR.

Digging Up Strawberry Beds.

I OBSERVE that it is generally recommended to dig up strawberry plants after they are one or two years old. I have a strawberry bed 16 years old, and they bear just as well now as ever they did.—W. W. R., *Toronto, April*, 1889.

Fruit in Lanark Co.

SIR,—Pressure of business has prevented me from acknowledging my premium "Winter St. Lawrence" apple tree, and the copy of the Ont. F. G. Ass'n Report for 1888, both of which I fully appreciate. The little tree is in full leaf and growing nicely. Small fruits, viz., strawberries, gooseberries, and currants promise great abundance of fruit this year. Some of my bushes are pictures of plenty, being bent to the ground already with their growing burden. Plums are a small crop; apples also, except Alexanders, which with me are fully loaded. Caterpillars are very numerous and they are attacking forest trees as well as fruit trees; this pest is becoming a serious one and will be hard to keep in check if the race continues to increase as it has done during the last few years.

In this vicinity we have so far escaped late spring frost, and vegetation is very much advanced, in fact the growth has been quite phenomenal. The weather is at present wet and chilly, and there is still danger of a damaging frost, barring which there is likely to be plenty in the land.—W. H. WYLIE, *Carleton Place, May* 28, 1889

The Crandall Currant.

Your Postal at hand. Rather late to plant the Crandall, but we mail you a plant, well cut back, that may grow, also a twig of green fruit that will show something of its productiveness.

The cut of Crandall please keep. We may order it sent to some other paper sometime. The Crandall is now a wonder to behold, with its load of quarter-grown fruit bending the bushes to the ground.—FRANK FORD & SONS, *Ravenna, Ohio.*

The branch of currants is certainly an object of great interest, being loaded heavily with fruit of a promising appearance. We have planted the bush in our testing grounds, and will report as soon as possible concerning its value for Canadians.—EDITOR.

OUR FRUIT MARKETS.

Montreal.

Apples.—The season for old apples is now about over, with the dumping grounds full of their remains. May our dealers never see the like again. It will not be long before new apples in crates will make their appearance from the South. Bankers in the West, it is said, took a greater interest in the apple market last year than ever before in their lives. Their connection with it, however, will not contribute anything towards their dividends.

Strawberries.—Supplies from New York fair, with sales at 20c to 25c per quart.—*May* 24, '89.

Representatives for Montreal houses are already making arrangements down in Tennessee for securing the product of some of the earliest orchards. It will therefore not be long before the first shipments of the new crop of apples are received.

Strawberries.—A new feature in the market was the arrival of Chicago berries at the beginning of the week, which sold down to 10c and 11c per quart by the case. Receipts of New York berries are larger, with sales at 12c to 15c per quart. Great damage is said to have been done Canadian strawberries, but dealers think the injury has been exaggerated.

Cherries.—California "black hearts" have met with fair enquiry, with sales at $3 50 per box. The fruit is very fine and tempting.

Apricots.—The first lots of California fruit came to hand this week in very good con-

dition, and were picked up readily at $5 per box.

Cabbages.—A car of Southern cabbages has just been received which sold at $3.50 to $4.50 per crate.

Onions.—The market is quiet and prices are somewhat easier, Bermudas being offered freely at $1.50 per crate.

Potatoes.—There is a fair demand at the cheap prices ruling, which has helped to increase consumption. The sale of a carload was made a few days ago at 42c per bag, but the quality was very choice, and we quote car lots 35c to 42c as to quality and jobbing lots 45c to 60c.—*Trade Bulletin, May* 31.

OUR BOOK TABLE.

SEVENTH ANNUAL REPORT OF THE BOARD OF CONTROL OF THE NEW YORK AGRICULTURAL EXPERIMENT STATION, 1888.

The report of the HORTICULTURIST in this volume, contains some points of interest to us as fruit growers. One is the further trials of hyposulphite of soda for the apple scab, which go to prove that though not wholly effective in ridding the fruit of this fungus, it yet very much lessens the amount of the injury, and well repays the slight additional cost of adding it to the solution of Paris green when spraying for the codling moth. We notice that the proportion used in 1885 was one pound to ten gallons of water, and in 1888 only one ounce, and that the latter was less effectual than the former.

THE JOURNAL OF MYCOLOGY, devoted to the study of Fungi, especially in their relation to plant diseases, from the United States Department of Agriculture.

FOURTEENTH ANNUAL REPORT OF THE ONTARIO AGRICULTURAL COLLEGE, 1888, from Mr. Jas. Mills, M.A., President of the Agricultural College, at Guelph.

NOTE SUR LA CULTURE DE LA VIGNE SOUS VERRE and other interesting French pamphlets, written by Monsieur Ch. Joly, Vice-President de la Société Nationale d' Horticulture, de France, from the author.

THE

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SIMON'S PLUM.

THE peach crop, of late years, has proved itself to be so uncertain, even in the most favored portions of Ontario, that fruit growers have become much discouraged with peach culture. Many of us, who planted thousands of peach trees some ten or fifteen years ago, have now only hundreds; for the yellows have destroyed them wholesale, and the winters have been so destructive of the fruit buds that there was no encouragement to replant.

This month we show our readers a colored plate of a fruit which promises to be a real acquisition to fruit growers, who, like us in Ontario, live on the Northern border of the peach belt, because it may take the place of the peach, at least in part. Though commonly called a plum, the fruit, especially when cooked, resembles that of the peach; and the tree itself, both in flower and foliage, more properly belongs to the peach than to the plum family.

It is named "Simon's Plum" after Eugene Simon, French minister at Pekin, who found it growing in North-eastern China, and forwarded it to his brother-in-law, Simon Louis, of Metz.

Prof. Budd says he first saw it bearing in the valley of the Moselle, in Eastern France; and being favorably impressed with it, he introduced it into Iowa for testing. He has found it to be as hardy as the Chicasaw plum, and recommends it for extended trial. Mr. A. M. Smith, of St. Catharines, fruited it last summer, and was much pleased with the quality of the fruit, which he considers well represented in our frontispiece. In our experimental grounds, we also have a half dozen trees which we believe will be an ornament, even if the fruit should not prove equal to expectations. If we can secure good stock, we hope to make arrangements for placing it on our list for distribution in the spring of 1890.

SOME CANADIAN HORTICULTURISTS.—VIII.

W. H. MILLS, HAMILTON, ONT.

A Sketch Written by His Daughter.

THE subject of the present sketch holds a prominent position among Canadian Horticulturists who have made valuable contributions to the science of fruit production and culture in our province; his writings on these and kindred subjects have appeared from time to time through the press, in the United States and Canada, marked by ability and clearness of perception.

The portrait, accompanying this sketch in our present number, is a correct likeness of William Hamilton Mills, who was born in the village of Hamilton, now known as the "Ambitious City," on the fourth day of August, 1822, of Scotch and German parentage, toilers and tillers of the soil, among the hardy pioneers grappling with all the hardships of the earliest settlers, preparing the fields for golden grain and blooming rose. Among scenes like these on his father's farm, his younger days were passed. Hill and dale, field and forest, contributed to his love of nature.

Securing a limited book education under difficulties then prevailing, —happily now removed through an efficient school system—he, however, fitted himself for the study of law under the tuition of Dr. Kay, and having passed preliminary examinations, was by the Benchers of the Law Society of Upper Canada, admitted a member thereof at the age of nineteen, subsequently pursuing studies in the law office of Mr. Richard Beasley. Having finished his clerkship under this gentleman he took out certificates and practised for several years, but the old love for the beauties and mysteries of nature remained with him, he abandoned the practice of law and turned his attention to the more congenial study of fruits and flowers, in which he has been engaged for many years in a quiet and unobtrusive way,

To enable himself more effectually to persue experimentally these studies he purchased three acres of suitable soil, within easy walk of his residence, to which he gave the name of "Pomona," covering this with various fruits and vines, the output of which we hope to be able to lay before our readers in time. In this way he was led to take an active part in establishing our present Fruit Growers' Association, drafting the necessary papers under the Act 31, Vic. chap. 29, in 1868, and in conjunction with his old horticultural friends a meeting was convened at the Court House, Hamilton, on the 15th day of May, 1868. At the request of those present he took his seat as President, *pro tem*, until the general annual election, when again he was elected the first President under the above act, delivering his first address 22nd Sept., 1868, in which he reviewed the labors of the old association, and set forth the duties and responsibilities

Fig. 50.—W. H. MILLS, HAMILTON, ONT.

of the new organization, followed by other annual addresses and articles on various subjects, many of which are matters of record in the proceedings of this association. "Ex-officio" he took his seat in the then flourishing Council of Agriculture and Arts, and was by this council appointed delegate to the Convention of American Pomologists sitting at Philadelphia, where he became a life member of the American Pomological Society, and soon after was admitted a member of the American Association for the Advancement of Science. In one of his annual addresses he dealt with the important subject of "Forest Denudation," since which time the subject has become one of more than ordinary interest, engaging the attention of all civilized nations as of paramount importance, not only to agriculturists and fruit growers, but as touching the health, happiness, and progress of the race; these he clearly saw were correlated forces. This and similar subjects still engage his attention.

In the field of Hybridization some of his productions bear his name. Ever occupied in the study of plant life, being a close student of Evolution, his guiding "Motto" has been "To the solid ground of Nature trusts the man who builds forever."

THE FRUIT PROSPECTS.

ONTARIO fruit growers were congratulating themselves during the month for May, on the magnificent prospects of an abundant yield of many kinds of fruit. When "Old Probs" said on the 28th of May that there would be a frost in some parts of Ontario we thought the parts affected would no doubt be north of Lake Ontario, and we in the Niagara district would escape in safety. But Jack Frost took quite a new departure, and treated us with the greatest severity. A fruit grower at Fonthill who has twelve acres in fruit, upon which he wholly depended for his living, took the writer through his grounds a few days ago. His fine vineyard, of which he had been justly proud, was now a source of bitter disappointment; the frost had not left a single green leaf, much less a single bunch of grapes. All his strawberries were cut off. "Indeed" he said, "I have not a thing left me to pay for my labor this year in caring for my fruit farm."

"Surely your apples are safe," said I.

No, "he replied," they too are completely gone."

"But there are a good many still hanging, and the they look all right."

"Well" he said, "they will not hang long," and with that he cut open some of them and disclosed the dark core, a full proof of the destructive work of the frost. Cherries and pears were also totally destroyed, and even his raspberries, though looking to be all safe, yet, upon cutting open the still unopened buds, the black germ showed but too plainly the sad tale of death.

Over a large part of the Niagara peninsula, nearly as unfavorable

reports are made, except from a few favored localities, such as those sheltered by the Niagara escarpment. One of these is the neighbourhood of Grimsby, where in a narrow strip of land between the "mountain" and the lake, we are able to report an almost entire immunity from the frost. The young tips of the grape vines were touched, but not the fruit bunches, potatoes were very little hurt, and even corn escaped being cut down, except in some few places. Some cherries are dropping, but not enough to prevent our having a good crop. Pears are very scant, having set poorly. Apples bid fair to be a good average as will be seen from Mr. Pettit's report below. One singular thing about the apple crop is that the Greenings have changed their bearing from the even to the odd year, and thus have wisely parted company with the Baldwins, which are scarcely bearing at all this year. Another is that the King apple trees are this year loaded as heavily as that prodigious bearer the Greening, which is not at all consistent with its previous record of scanty crops.

In Western New York, according to the latest reports, plums, pears, peaches and grapes are almost totally destroyed, cherries are much damaged, except the Biggareaus, and even the apple crop has suffered very seriously.

Altogether from the reports published below, and from the accounts received from other sources, it would appear that those who are fortunate enough to have a crop of fruit this year, will do unusually well, for the supply must be far below the average.

The outlook in Great Britain is also quite poor for the British fruit grower. Both "*The Garden*" and "*The Gardeners' Chronicle*" report that the apples have set very poorly, and that the prospect now is for a very light crop. We will be cautious about shipping heavily to Britain after last year's experience, yet means of transporation are becoming so easy that any advance of price in the foreign market soon affects our home markets.

Our readers will be interested in the following reports from prominent growers in Ontario :—

Oxford County.

SIR,—Your card inquiring as to fruit prospects, to hand Saturday evening. Apples, pears, plums, and grapes are practically destroyed by the late severe frost. There are yet a few apples hanging to the branches but I think there is but little doubt that these will fall shortly. There will be no cherries here. The black knot has destroyed nearly all the trees in the district, and the frost took the very little fruit on the few branches not totally destroyed by the knot. In strawberries, Crescents, and a few other hardy varieties, will be a fair crop. Sharpless, and other large varieties will not produce more than from one-third to a one-half crop. In currants, blacks will not be more than a half c[illegible], White Grape is perhaps a little better, Red Dutch will produce nearly a full crop, the other red varieties from one-half to a two-third crop. Gooseberries will be nearly or quite a full crop. In Raspberries, Cuthberts and Greggs promise an enormous crop. Some of the earlier varieties were somewhat injured by the frost already referred to of the 29th of May. In flowers, roses, (which up to the 29th promised an abundant crop) will now produce but a very small first crop of bloom.—FRED MITCHELL, *Innerkip.*

Lincoln County.

SIR,—In reference to the prospects of the fruit crop in this section of Ontario, opinions differ widely, just in proportion to the extent of damage caused by the late frost. Well may one give expression to his feelings of despair when he looks over a fine patch of strawberries, that told him a few days before to lay by a good stock of baskets and crates, and now to find them almost worthless; or to see a fine vineyard, nicely cultivated and trained to the trellises, with the foliage destroyed and the berries drying up and falling off. Happily, however, this unfortunate state of affairs is not general, some escaping; those near the moun-

tain and lake have suffered very little indeed, but in some sections the opinion is freely expressed that even the apples, cherries, and plums are entirely destroyed. One cannot help hoping that when the flash of disappointment has passed away, the prospects will look brighter. In this immediate locality, strawberries will be a good crop and of fine quality. Other small fruits promise well; pears will be a fair crop as well as peaches and plums; grapes, where not injured by frost, will be a fine crop; apples will not turn out nearly so well as last year, although the quality may in a measure make up the general average. The codling moth, I think, has not done as much damage as in other years, perhaps on account of the cool and wet weather. The Greening is promising again to be more productive than other varieties. I am glad to see that variety, so much despised a few years ago on account of its color, maintaining its old reputation for quality and productiveness, being superior to many of the red varieties,—fine feathers they say make fine birds, but that will not apply in all cases to fruits. On the whole I think we may fairly sum up the prospects by saying there need be no cause for alarm, there will be on the whole a fair average crop, and perhaps the large commission houses may wisely dispense with their dumping grounds for this season, as no great over-supply need be apprehended.—A. H. PETTIT, *Grimsby.*

Halton County.

SIR,—The frost of the 26th ult. did a good deal of harm here, but the frost of the 29th played havoc. The strawberry crop is about half destroyed. Apples and grapes almost entirely. The latter were ruined at once, but the apples showed no palpable injury until last week, when almost the whole of the blossoms fell off—Ribstons and Blenheim Orange seemed to have suffered the most, and they gave a splendid promise this spring. As far as I can see Greenings and Russets seems to have fared best, but the blossom of the latter was light. Raspberries, black caps and blackberries are all now opening their blossoms, and all show some injury, although not severe. Gooseberries and cherries suffered a little, especially cherries. The Downing gooseberry seems all right, but Crown Bob, Whitesmith, and Industry, have all shed a lot of their fruit since the frost. Of strawberries, Wilsons are very badly hurt. All through this section, Crescents and Manchesters have escaped fairly well, whilst James Vick is hardly touched. I find also Daniel Boons, Lacon, Seneca Queen and Atlantic have got off pretty well, and Bidwell also keeps ahead of Wilson with regard to damage received—Monmouth and Jessie with me are totally destroyed, not one berry where there would have been a hundred. On the 29th I kept fires burning all night round my strawberry ground, but do what I would I could not keep frost off entirely. I managed, however, to prevent the thermometer going below thirty degrees, Fahr., whilst on other parts of my farm the thermometer went as low as twenty-four and a-half degrees, Fahr. That was at 3.45 in the morning. Of course these temperatures were taken with the thermometers laid on the ground. I also took each observation with duplicate thermometers, so I am sure they were accurate. —GEORGE BUNBURY, *Suffolk Lodge, Oakville.*

Simcoe County.

SIR,—The late frosts have done a great deal of damage to fruit here. In the early part of May the prospect for a large crop of fruit was never better. But a great change has been made by the exceedingly cold weather in the latter part of the month. Grapes are ruined for this year, and strawberries are badly damaged. Most all of the early blossoms turned black, and in some places gooseberries were frozen and dropped off the bushes. Snow fell here on the 28th, accompanied with cold wind, resembling a day in March rather than May. And at night the wind fell and we had a severe white frost, which, in some places, formed ice more than one-eighth of an inch thick. The previous warm weather had forced vegetation at a rapid rate, so that everything was very tender. But the wet weather that followed no doubt did much to repair the damage done by the frost. Apples and plums escaped pretty well, being too far advanced to be injured very much; but tomatoes, cucumbers, melons, corn, beans, early potatoes, etc., were almost entirely destroyed. However, many of those things can be replanted, and the strawberries continue to produce fresh bloom, so that, with favorable weather, we may yet have a fair crop. But grapes are a hopeless case for this year, and they had never showed in my experience such an abundance of blossom as they did this spring. I am sorry I did not try the experiment of lighting fires among the grapevines to keep off the frost, as I saw it stated in the HORTICULTURIST some time ago that that is the plan adopted in France. The idea is that by keeping up a constant smoke all night by means of small fires here and there through the vineyard, the smoke will keep off the frost. I believe the Concord vines, with a very little protection, would have come through all right. I would like to hear if anyone tried the smoke remedy, and whether or not they succeeded in saving the crop by it.—G. C. CASTON, *Craighurst.*

Victoria County.

SIR,—I enclose you the following report on fruit prospects for summer of 1889:

Apples.—All trees blossoming early and that had not borne too heavily in 1887 will, this year, yield a very large crop. The frost of the 29th May injured, to some extent, varieties not having their fruit set at that time.

Blackberries.—Canes look remarkably well, and show plenty of bloom; a large yield may therefore be expected. Unfortunately the cultivation of blackberries is on a very limited scale here.

Currants.—White and red will yield a large crop, black but moderately.

Gooseberries.—As usual there will be a large crop of all varieties. The English varieties, Whitesmith, Crown Bob and Industry, are mildewed, but not so badly as in former seasons. The Industry suffers most. The new variety,

Golden Prolific, is as badly mildewed as Industry.

Pears will be the largest crop ever grown here. The fruit on many of the trees must be thinned to preserve the trees. All pear trees bore a superabundance of bloom, but a few trees unfavorably situated, so that the young fruit did not set during the hot weather, lost much—in some cases all—of the fruit by the frost of 29th May.

Plums will be an average crop, notwithstanding a heavy loss by the late frost.

Raspberries of all varieties are looking well, and promise a large yield.

Strawberries are doing much better than could have been expected, when the injuries from the white grub and the drouth of last year are considered. There will be less than an average crop in this district.—Thos Beall, *Lindsay, June* 10, 1889.

Stormont County.

Sir,—The apple crop promises to be fair, but likely under our average. Still, there will likely be more realised off our moderate crop than from last year's unusually large one, as we are likely to have less work and better prices. The tent caterpillars were unusually numerous and in many cases were left unmolested, our careless neighbors bringing us in for much damage from their shiftlessness. It should be as compulsory to destroy the caterpillars as to cut the thistles. We would like advice from some of our friends as to the most approved method of destroying the pests. Some burn them off with a coal-oil torch, I don't know with what success. Our plan was to wind binding twine round a thin pole, besmear it with pine tar and wind it round in the nest. Nests on small detached limbs are cut off with long handled pruner.

Raspberries, currants and gooseberries promise well. Strawberries also have a good show of fruit, but the unusually wet fall prevented the beds being kept clean, and heavy rains during the last ten days have given the weeds a great start on us.—John Croil, *Aultsville.*

City of Ottawa and Vicinity.

Sir,—I have much pleasure in reporting that the prospects for fruit here are good. Currants and gooseberries will be a heavy crop, also plums and apples. The raspberry canes were somewhat injured by the winter, as the snowfall was light. On some grounds the strawberry will be a complete failure, owing to the same cause. Where plants have been saved prospects of a crop are fairly good. Much here depends on our winter weather. The dark season of 1888-9 was comparatively mild, with a light snowfall.

The currant worm—saw fly—has been plentiful and persistent, attacking gooseberries and currants with unusual avidity and persistency. It has been practically almost impossible to keep hellebore on the leaves, owing to the heavy and constant rains. Had it not been for the use of Paris green no bush could have lived, as it is, some branches have suffered. The Tent caterpillar has also been exceedingly severe on apple and plum trees; it is feared these pests will do great damage where the trees are not carefully watched, and in some instances this is almost impossible where farmers have other fish to fry at the same time. Cut worms have been numerous and have done much damage to all sorts of garden stuff in its green and succulent state, destroying melon patches and other plants of a like nature.

The Amelanchier looks well and is loaded with fruit. Lucretia Dewberry is almost killed out with winter frost. Grapes are looking well, but they now require heat; though they made an early start the late persistent showers have kept them back. Still they came through the winter well, where covered with earth, and are making a good growth. P. E. Bucke, *Ottawa, June* 5, 1889.

Huron County.

May 29, p. m.—On the night of 27th we had a gale of wind, with heavy rain; next day, 28th, we had a very cold, strong wind all day, with snow in the morning, and during the following night a heavy frost, ice on pails of water three-sixteenths of an inch thick. The leaves on trees seemed full of ice. I expect most of our fruits are destroyed; if so, a loss of many million dollars to the country. The clothes on the line were frozen stiff. I covered all of my grapevine shoots saved from last week's frost, but they were all blackened in the morning. If the weather had kept favorable, I expected hundreds of weight of grapes, but now will not get a cluster, except from a vine or two against the house. Gooseberries are laying on the ground by hundreds; the same with currants. Raspberries are hanging down their heads. As for strawberries, I can't say yet how they are; they were in full bloom. Seedling oaks and Catalpas cut severely, and my young Catalpa tree blackened on the tender shoots.

May 30, a. m.—I have just been examining the various fruits; I can't see much damage done to apples or pears, but cherries, a lot of them, are brown. The same with plums. The gooseberries and currants don't seem to be hurt very much. Strawberries don't show much hurt, nor raspberries, but it is rather soon to make any decision. I see the leaves of Virginia creeper are killed, a plant I thought to be hardy. I expect most of the tomatoes planted out are spoiled, also beans that may be up.

This morning we have a cold driving, rain. How changeable the weather is! On the 18th the mercury was 94 in the shade, and ten days after several degrees below freezing. We had May weather in March, and now March weather in May. P. m.—Have made further examination, and find that the gooseberries and currants are badly frozen that were exposed, but those under the leaves and branches escaped.—Walter Hick, *Goderich.*

Wentworth County.

Sir,—There could not have been a better prospect for an abundant crop of all kinds of fruit than we had in Div. No. 7 this spring.

Everything came through the winter in excellent condition, and at the end of May was about two weeks in advance of ordinary seasons, but on the night of the 28th the bright prospects were dispelled by a heavy frost,

which almost entirely destroyed grapes, strawberries, etc., and in some places cherries, pears, plums and even apples were destroyed. Reports have been so much exaggerated that it is difficult to arrive at just the amount of damage that has been done. There is no doubt, however, but that the fruit crop will be very light, particularly grapes and strawberries, although that portion on the south shore of Lake Ontario, between the lake and mountain, has suffered very little from frost, and the prospect is good for peaches, grapes and all other fruits. —M. PETTIT, *Winona, June* 8, 1889.

City of London.

SIR,-I have made much enquiry in this neighborhood about the damage the frost has done, and find strawberries about half cut off, grapes badly injured, currants and gooseberries perhaps a third destroyed, apples and pears not hurt; apples well set and at present promise a good crop. The rest of the stuff, such as potatoes, beans, tomatoes, etc., we shall not miss, as the season is very early.—JOHN M. DENTON, *June* 4, 1889.

Kent County.

SIR,-The fruit prospects here are good. They were extra good but for the late frost, which destroyed most of the currants and first crop of grapes (though many yet look for second crop of grapes). The strawberries were hurt a little. All the other fruits are looking well. Apples appear very favorable for a great crop.—F. W. WILSON.

Norfolk County.

SIR,—Previous to the morning of the 29th of May the fruit prospect for this section was the best, by far, that I ever remember. In some apple orchards it is now difficult to find a sound specimen of fruit; but in other orchards there may be half a crop. Peaches destroyed.

In some localities there will be a small crop of pears, plums and cherries. Grapes are all killed. About one-eighth of the strawberries are left. Black caps are killed, but red raspberries are but slightly injured. Currants and gooseberries are very badly frozen.—J. K. MCMICHAEL, *Waterford, June* 5, 1889.

Prince Edward County.

SIR,—Prospects of the coming fruit crop are not altogether promising now. We never had a larger show of bloom than this year, but very much has failed to set.

Apples are very thin in the trees, and the spots are already developing upon such varieties as are liable to that disease. Duchess look well, but only in some places. Ben Davis looks well on one side of our orchard while on the opposite side a perfect failure. The Golden Russet looks more promising than any other variety on our place, and they will not be one half of a crop.

Pears are doing fairly well; and if it was not for the spot we would expect an abundant crop of Flemish Beauty. The Dempsey looks better than ever before at this season of the year; not being subject to spot, we look for a good crop.

Cherries cannot amount to much with us this year. The Old Kentish and the Early Richmond are the only two varieties that are fruiting to amount to anything this year.

Grapes are doing well, having come through the winter in good order and just now commencing to blossom. The season seems favorable for small fruits.—P. C. DEMPSEY.

Norfolk County.

SIR,—The fruit prospects in this section of the country previous to the morning of the 29th of May was on the whole the best we ever have had. The frost, however, has changed the outlook to one of the poorest.

The apples are mostly frozen with the exception of those that were protected by thick foliage.

Pears, plums and cherries are even worse than the apples.

Peaches, grapes and the earlier varieties of black raspberries nearly all destroyed. Red raspberries not very much injured. Currants and goose berries about half destroyed.

Strawberries nearly all frozen but there will be a small crop from blossoms after the first.—J. K. MCMICHAEL, *Waterford.*

York County.

SIR,—Your card of 14th at hand. I have not been through the country a great deal so as to enable me to give you what I would call an accurate account of the fruit prospects, at the same time from what I can learn, I find that in this district fruit is likely to be a short crop. Strawberries were in many cases greatly injured by the frost, and the apple crop will not be more than half a crop if it goes to that. Pears in a great many sections look pretty well, but there will be no plums to amount to anything, and few cherries. I think raspberries were not injured by the frost but in this district, except in this immediate vicinity there are very few grown. Summing the matter up, I think, as a whole, there will be a very poor fruit crop in this agricultural district.—W. E. WELLINGTON, *Toronto, June 17th, 1889.*

Huron County.

MY DEAR SEC'Y,—In reply to your post card, I can only say that grapes are almost altogether cut off; peaches are badly killed; plums along lake front nearly a half crop, pears a fair crop, and apples a very small crop, not a quarter crop. Cherries were badly cut and the first blossom of strawberries also. Currants and gooseberries are a fair crop. This is along lake fronts only. Inland I find that there will be very little fruit of any kind. I fear the prospect is not at all a bright one for apple shippers in this Province. The curiculio is worse this year than it has been for some years, so that, Mr. Roy to the contrary, we must have recourse once more to Paris green.—A. MCD. ALLAN, *Goderich, Ont.*

Lambton County.

Apples.—Prospect of fair crops and possibly a very good yield to the hardier kinds.

Pears.—Ditto.

Plums.—No blossoms.

Peaches.—Few blossoms injured by frost.

Grapes.—Badly injured by frost in May.

Gooseberries, currants and strawberries partially injured by frost, but yet promise a fair crop.

Raspberries promise a good crop. Plants healthy appearance near here.—J. A. McKENZIE, *Sarnia, June 18th, 1889.*

Perth County.

SIR,—From the first to the middle of May the prospects of an abundant crop of fruit was never better in this country; at the time of writing, June 15th, the promise was never poorer. So far as apples are concerned the outlook is a gloomy one indeed. During the past few days I have visited and examined a number of the best orchards in the county and venture the statement that there will not be a barrel of perfect apples in the half dozen or more orchards visited. Such a condition of affairs, as indicated prevails throughout the county. I have no recollection of a spring frost so sweeping in its disastrous effect to the apple crop as that of three weeks ago.

With the exception of a few old native trees the destruction of the pear crop is just as complete as that of the apple. I have one pear tree thirty-five years old that seems to have resisted the effects of the frost and is maturing its heavy crop of fruit; but all the other trees of various varieties though covered with blossoms, are not going to mature a specimen. Grapes are totally gone, and it is doubtful indeed, if the wood of last year's growth will recover the shock. I am forcing mine out again from the bottom so as to have an entire new vine.

Currants and gooseberries suffered much, though on well protected bushes there will be a fair crop. The currant worm got at his work earlier than usual this season and had some bushes more or less stripped of their foliage before his presence was observed. In such cases the frost did its damage completely, but where the foliage was heavy the young fruit was protected and saved. Plums, there will be none. There was not in fact an average show of blossom in this section, and what there was is killed. Cherry trees made great promise in the blossom but the meagre percentage of blossoms that withstood the frost will mature a poorly developed fruit at best.

Strawberries will be an average crop though late. All the earlier blossoms were killed, but the abundant rains produced a growth that we would, under ordinary conditions, not likely have had, and the result will be a fine average late season fruit.

In raspberries there is promise of an abundant yield; never better.—T. H. RACE, *Mitchell, June 15th, 1889.*

Dundas County.

THE worm has not been as lively this spring as in former seasons. I have only put a little slug shot on my gooseberries twice, and there is not a worm to be seen. My blackberries, the Taylor, Blackcaps, Tyler, Gregg and Mammoth Cluster, are just loaded with berries. The red raspberries, Cuthbert, Brandywine and Philadelphia are all bearing heavy crops. The Golden Queen "White" even exceeds my most sanguine expectations, being loaded very heavily. Cabbage and all other vegetables are first-class, although we had so much wet weather. Potatoes, very early. I have had some Henderson's Early Puritan in blow for two weeks and Early Rose about nine days in blow. Peas: Bliss, American, Monte, first crop ready to pick on Saturday of this week. All crops looking well, and fruit of every description good crop, and, so far as we can judge now, free from spot.—LEVI F. SELLECK, *Morrisburg.*

THE LARUE OR BAXTER APPLE.

SIR :—I do not know whether Mr. Nichol or your printer has made a mistake—probably the latter, as a *u* may easily be mistaken for an *n* when written, but a mistake has been made in the June HORTICULTURIST in the name of the apple Mr. Nichol writes about. It should not be Larne, but Larue. It may interest your readers to know that Billa Larue, from whom it took its name, received a grant of a number of lots of land in the township of Escott as early as 1802, and planted not only apple, but walnut and chestnut trees. Some of the apple trees planted by him yet remain on the property, now in the hands of a family named Snell, also descended from the first settlers. Larue's apples became famous all through this part of the country. Last year I was spending my holidays in that neighborhood, and became interested in some rifle pits and other relics of the early wars on the Larue property. Some time afterwards I happened to speak of the matter to my father, now over eighty, when he immediately asked me about the apple trees, as he remembered hearing of and eating Larue's apples when a boy. I could relate some of the legends respecting Larue and his alleged wealth, and of the appearance of his ghost, or those of his numerous wives, who lie buried beside him under the shadow of some of the old apple trees on the old farm ; but as yours is a horticultural rather than an historical journal, I will forbear. But let the correct name be applied to the apple, so that the memory of its introducer may be properly handed down.—J. J. BELL, *Brockville, June, 1889.*

Words from the Cold North.

SIR :—Is there not some mistake in that valuable paper of Mr. Nichol's as printed in the June HORTICULTURIST on the "Baxter" apple ?

I notice he calls it the "Larne." I am inclined to think the mistake is in the reading of the manuscript, and it is one that could be very easily made. I have known the apple for several years under the name of "LARUE OR BAXTER," but never knew it to be called Larne before. Kindly see letter in HORTICULTURIST for March, 1884, page 59.

This apple was first brought to my notice on the tables of one of the agricultural exhibitions in Kings. It is very large, attractive in appearance, keeps till February, and is fair in quality—as Mr. Nichol says, preferable n this respect to either Alexander or Ben Davis. But in our section it must rank along the "almost hardy enough" varieties. As yet I have not succeeded in growing it successfully, neither do I know of any one growing it in this section. Our

FRUIT PROSPECTS

this year are very poor for everything but small fruits. Plums, apples, and even crabs are a complete failure. Small fruits will be in abundance.

Can any of your readers give me any information *re* the

CRIMSON PIPPIN APPLE.

I have two trees that are very promising. I have had them now for four years, and as yet they have withstood our cold winters remarkably well. They were given me by one of my horticultu-

ral friends—and what horticulturist has not got horticultural friends? And would it not be a sin to refuse an offering from such an one? I took the trees, planted them, expecting they would die the first winter; but to my utter astonishment they are doing well. They have not fruited with me as yet, consequently I know nothing about them, either as to size, appearance or quality. Am pleased to note the continued improvement in the HORTICULTURIST. — A. A. WRIGHT, *Renfrew*.

DECORATION OF HOME GROUNDS.

DEAR EDITOR: I was pleased to see in June number of your much prized journal, an article on the Honeysuckle, accompanied by a colored plate of three popular and desirable varieties. Nothing so much improves the appearance of our homes as a few hardy climbers and flowering shrubs about the grounds, and the climbing Honeysuckle is one easily managed, of thrifty growth, and that will abundantly repay the small amount of annual care required. It is a pity some of our Canadian farmers do not pay more attention to the adornment of their homes by the addition of a few hardy flowering shrubs and native shade trees. We know they are industrious, hard-working people, and that "time is money" to them, as well as to the merchant; but a very few days out of each year given to the care of the lawn and flower garden, would so amply repay those concerned that we should like all owners of homes to try the experiment. One or two common lilacs, say a white and colored; a syringa, or mock orange, a snow ball, and that most showy of all white flowering shrubs, the 'Spirea Van Houtti;" these with a few of our native evergreens, as Spruce, Hemlock or White Cedar, would require little or no care after they are once started, besides making home more home-like to our children: they would also add money value to the place and make the neighborhood a more desirable one for strangers to settle in. Almost any one who has them growing would be pleased to give for the asking a few sprouts or suckers of the shrubs named above, and they may be transplanted in either Spring or Fall. Some of our farm houses in this district are really elegant structures, and a credit to those who, through thrift and industry, have acquired the means to build and furnish them; yet we have often remarked that some of these grand places, without either flowers, shrubs or trees, do not look nearly as home-like as an unpainted cottage, perhaps not far from them, which is surrounded by foliage and flowers. I hope you will continue from time to time to give a little space in your valuable journal to articles on the cultivation of flowers and lawn decoration. At some future time I may perhaps write you on "House Plants—How I Succeeded with Them," etc.—FRED. G. LOCKETT, *Belleville, Ontario*.

AMATEUR GARDENING.

By W. S. Turner, Cornwall, Ont.

THE size of my garden plot is about 100 feet square. I commenced work by ploughing the sod under, and putting in corn and potatoes as a first crop. I saw there was a goodly quantity of quack grass, and having read of the experience of others in the *Rural New Yorker*, the Canadian Horticulturist, and other journals of that class, I came to the conclusion that my best partners must be the hoe, rake and perseverance.

I used these three articles with such good purpose that the following spring I saw very little of my old enemy the quack grass; though I was not quite so successful with the nut grass, and which even yet troubles me some.

The second spring, having made my soil a little mellower by cultivation and old manure, I put in ten apple trees, some gooseberries, black and red currants and raspberries. I now began to aspire to a few vegetables, such as beets, turnips, mangolds, sweet corn, peas, beans, tomatoes, celery, etc.

I cultivated between the fruit trees just as if I did not have any. I soon found that my family could not begin to consume the good things I grew, so I gave away some, and as that did not pay very well, I began to sell, so my little garden began to pay expenses, and more so when my celery began to be fit to sell, for celery, as some of you are aware, comes in as a good second crop.

The third spring, my garden, being in a proportionately better condition, I aspired a little higher, and put in one or two grapevines and a few strawberries, more currants and gooseberries. I find there are some things I can grow to better advantage than others, for I believe in making use of every foot of ground and taking out of it all I can get; and it is surprising what one can take out of a small piece of ground, well cultivated, well manured, and well studying the demands and requirements of each variety of fruit or vegetable. Now, for instance, take a tomatoe plant, it will take up about the same space as a hill of potatoes, and will produce, on an average, three times the value; true, it requires a little more care and cultivation, but the potato bugs will not trouble it until all the potato vines are dead. I will just say here that it is necessary, if you want extra fine tomatoes, to train them to one or two stalks by nipping off the laterals or small branches that grow out just above the leaves, and tying the one or two leaders to a stake, using a soft string for the purpose.

Some gardeners assert that poor soil is best for tomatoes, but that is not my experience. I give them good soil, rotted manure, and a sprinkling of wood ashes during the growing season.

I would here put in a protest against our farmers selling their wood ashes to enterprising Yankees

to be shipped to the States, and there sold at $2.50 per barrel. It ought not to require much arithmetic to convince them that it would pay them to use ashes as well as our friends across the border.

This valuable fertilizer is especially good for currants, gooseberries, strawberries, and, in fact, for all small fruits, and also for everything else in the garden. A favorite vegetable with me is celery. Too much cannot be said in favor of this excellent vegetable, and certainly too little of it is eaten; even physicians and druggists are beginning to recognize the good qualities of celery, for you may see in the druggist shop windows beautiful pictures, setting forth the wonderful cures by Paine's Celery Compound, and guaranteeing to cure all diseases of a rheumatic character; but why not use the celery in its purity, just fresh out of the garden. Once taste it, and the relish for it increases, and you want more every day. There are many vegetables that can be grown as a second crop, celery is one of these. It is something like the mangold and field turnip, it grows best in the cool, moist nights of the latter part of August, September and forepart of October, and it will take a very severe frost to hurt it.

You may put your plants in after early potatoes, beets, onions, shallots, peas, beans, and even after taking up old strawberry beds. For the more minute details of growing celery, I would refer to an article in the Canadian Horticulturist.

When I began to grow more than my family could consume, I made a bargain with one of our local vegetable pedlars to take my surplus stock, but he could only come on certain days, as the other days were taken up in going out to the country to sell vegetables to the farmers!

Just think of it. This is carrying coals to Newcastle with a vengeance. Now friend-farmers, do not suffer this reproach any more. Fence off a quarter of an acre near the house, give it a good dose of old manure and plough it up. Do not forget a corner for a few flowers; it will brighten the home for the girls; another corner for strawberries, it will be fun for the boys; another portion for tomatoes, celery and other vegetables, and my word for it you will receive the blessings of your wife and family, and everything will look brighter and pleasanter, for you will have everything fresh from the garden, and the vegetable pedlar will be a thing of the past.

MUSHROOM CULTURE.

By Hermann Simmers, Esq., Toronto.

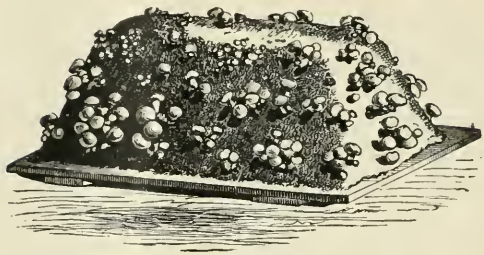

Fig. 51.

THE cultivation of this nutritious esculent is a very simple matter, and requires only ordinary intelligence and care. The materials needed are fresh horse manure, good soil and live spawn. The manure should not be too short, as it does not combine the necessary qualities. Long strawy litter plentifully mixed with short manure, makes by far the best beds, as it does not heat too violently, decomposes slowly, and retains its heat for a long period. Put in a heap and turn every three or four days to permit the escape of noxious gases, and prevent burning. Manure that has become white or "fire fanged" and mouldy is worthless for mushroom beds. When ready for use it should not possess an offensive odor, and should be as hot as can be borne comfortably by the hand. It should also be moist, for if too dry the decomposition of the mass will be rapid, and the bed exhausted before the crop has matured. If a shed or cellar is not available they can be grown in the open air, but the time necessary to perfect a crop will be longer. Make the beds 3 feet wide at the base, $2\frac{1}{2}$ feet high, tapering to 6 inches at the top, and of any desired length. The manure, when in proper condition, should be quickly handled to prevent the loss of heat, and be beaten down to make the heap firm and compact. When of the desired size the sides should be dressed down neatly and the heap covered with long litter. Allow this to remain till the heat has decreased to 90°; at this point the bed is ready to receive the spawn, which is done by raising the manure with the hand and inserting pieces of spawn 2 inches square, 9 inches apart each way. Liberal use of spawn results in larger crops. Many beds fail to give satisfactory returns owing to the bricks being broken in too small pieces. At the expiration of three days the spawn will have commenced to run, and the bed is in proper condition for covering with soil. Any good fresh soil will answer, but turfy loam from an old pasture or meadow is preferable. If the soil is poor add a liberal quantity of bone meal. The earth should be just moist enough to press together nicely; if too wet when put on it is apt to crack and thereby permit the heat to escape instead of permeating the bed evenly. If the soil is light put on to the depth of 2 inches, but if heavy 1 inch will be sufficient. The bed should again be covered with the litter, and it should remain on till the bed is exhausted, only removing it to gather the crop. If the bed shows signs of dryness water on top of the litter, and not directly on the soil.

Mushrooms can be readily grown in cellars, stables, sheds or pits. The requirements as to manure, soil, etc., are similar, but the season can be

prolonged and the temperature regulated more easily than in the open air. Many are successfully grown on a shelf in an ordinary cellar, and yield sufficient crop to compensate the grower for his effort. Spent hot beds also meet the requirements of them exactly, using materials in same manner as described. They will also grow admirably on top of the bench, using cloth for shading instead of litter. The time required for a bed to come into bearing is three to six weeks.

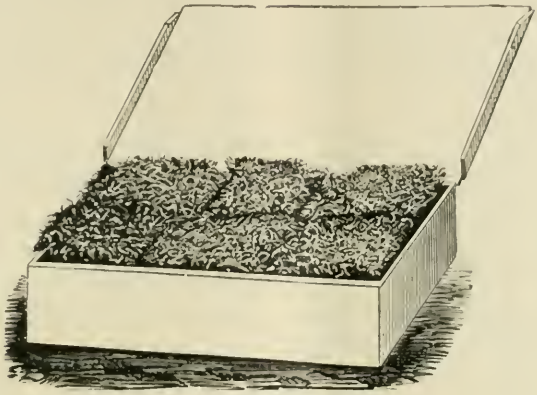

Fig. 52.

the mushroom in a large measure. Bits of mushroom can be inserted before the bed has become cold between the plants. When the plants are removed keep shaded with long litter, and water occasionally if necessary. The space under greenhouse benches or stagings will suit

In gathering the crop do not cut with a knife, but pull them up with a twisted motion. The spawn we offer is the best French and English. Amateurs and ordinary cultivators will find the English best suited to their needs.

HONEYSUCKLES.

YOUR interesting article in the June number on the Twining Honeysuckles doing well in Ontario is suggestive.

Of those you name only the *L. Sempervirens* will endure our summer and winter air, and the eastern and southern forms of this species are tender.

The hardy species we grow were imported from east Europe, and their botanic names show the uselessness of specific names from a horticultural standpoint. Some of the best we received under the names: *Lonicera Germanica*, *L. Media*, *L. Grata*, *L. Douglasi*, *L. Coccinium*, *L. Fraseri*, *L. Flava*, and *L. Quercifolium*.

The books say that some of these are natives of the eastern and southern U. S., some to our north-west coast and some to west Europe. But those familiar with the great herbariums of this country and Europe know that these species are widely distributed and include hardy and

tender varieties for given climates. As introduced from coast climates on our latitude from either continent, these species will not endure our summer heat or winter cold; while the interior varieties of either continent are perfect and even more beautiful in foliage and blossom. It is the old story illustrated by the hardy and tender Box Elders, Red Cedar, Silver Spruce, etc.

The great extent of our country, and extreme variations of climate, suggest the need of a garden botany; species not only vary in hardiness, but desirability for garden culture.

Our grounds contain a very large number of illustrative varieties. Among them I will name the Josika Lilac and the Privet.

The books say *Syringa Josikaea* was first discovered mingled with the Beech and other moisture loving plants in Transylvania. The flowers are described as "bluish purple and scentless."

This was tried and found wanting in our climate several years ago. Hence we were surprised to find varieties of this lilac in 1882, in nearly all parts of Russia. One of these from Central Russia has the typical foliage and flower of the Josikaea, but the leaves and flower trusses are larger and handsomer, and they are so fragrant as to perfume the whole house. It flowers fully four weeks later than the common lilac, and is as hardy with us as the Siberian Almond.

The common Privet (*Ligustrum Vulgare*) of west Europe, is defective in leaf and wood with us. But the form from Central Russia is perfect in plant and much handsomer in foliage and flower. Yet it is named *L. Vulgare*.

The point I wish to make is that trees and shrubs distributed under their specific name, as found in the botanical works, are delusive, and that we should have garden names that mean something.

J. L. Budd.
Agrl. College, Ames, Iowa.

Note by Editor.—We thank Prof. Budd for this article, and hope for frequent communications from his pen. We must explain, however, that on page 147 we did not intend to convey the impression that we had found *each of the three varieties* illustrated to be hardy in Ontario. We have the *Sempervirens* and *Halleana*; and these grow finely at Grimsby. We also have the native climbing honeysuckle, *Parviflora* and *Hirsuta*, doing well in our woods. We have still to find out by testing how far north *Flava* and *Periclymenium* will succeed.

FLORICULTURAL.

Adam's Needle.

"YUCCA FILAMENTOSA" is a native of our Southern States, but sufficiently hardy to be successfully grown in the latitude of New York, and even farther North with a slight protection. The foliage somewhat resembles that of the Aloe. It is a plant of striking form that is sure to arrest attention. It seems natur-

ally to find a place in old-fashoned grave-yards as well as in the modern cemetery, and as an ornamental plant deserves a place in the flower border and on the lawn. It may be readily recognized by the long, thread-like filaments that grow along the margin of the leaves. These thread-like appendages have given rise to several names, such as Eve's Thread and Bear's Thread, but the plant is most commonly known as Adam's Needle. The scape or flower stalk of a well-established plant grows five or six feet high, and produces from two to three hundred flowers of a creamy white, which last a long time.

The Yucca is a plant of very stately appearance. The wonder is that it is not more commonly grown. It is propagated from seeds, suckers, and root cuttings, suckers being preferred, as they soonest make large plants.

There is quite a pretty variegated form of *Yucca filamentosa*, but it is rarely seen, except here and there under glass, where its variegation becomes more pronounced than in the open air. The variegation consists of a white stripe along the margin of the leaves. The variegated form does not sucker as freely as the type, but may be readily propagated from root cuttings. The Yucca grows best in a light soil, and will even eke out an existence in pure sand; but it is worthy of something better.—P. B. Mead.

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Note.—The Yucca succeeds well in Southern Ontario even without protection, and for a back ground, not too near, is a most desirable plant, soon propagating itself to fill a large bed, and thus becoming particularly showy. It is grown on Dr. Beadle's grounds, St. Catharines, and on the grounds of the writer at Grimsby.

Management of Roses.

A congenial soil is the first requisite for success with roses, and this is not always at hand. That in which the rose delights more than in any other is a deep, rich, heavy loam, moderately moist. The rose is a gross feeder and will at all times resent neglect. Poor soil will not yield good roses. No, not even poor ones. A liberal supply of plant food is absolutely necessary, in order to secure roses. The amount of flowers is proportionate to the growth of the plant; they will appear just as fast as the wood is produced that bears them, and the wood is produced according to the supply of plant food furnished. That is about all the secret there is in growing roses.

The best plant food for the rose is a compost of well-rotted turf and cow manure in equal parts; this is to be applied at any and all times; it makes but little difference how or when, so long as the plant has always a supply on hand ready for use. Manures should never be applied to rose beds until thoroughly decomposed, then a surfeit is impossible. The best plan is, after the plants have been set in a well-prepared bed, to mulch the surface, say to the depth of two inches. If the soil is naturally cold and heavy, horse dung will be better; if light and dry, cow dung is decidedly preferable. Whatever the nature of the ground may be it should always be kept moist and warm, at the same time never sodden; too much wet is as fatal as drought; either will consume. The best situation for the rose is an open and airy one; in such, with a liberal supply of manure, roses can be had the entire summer, and it is folly to think of getting a crop in any other manner. In cases of drought, liquid manure can be applied with excellent results. Growth must be constantly kept up; the more rapid, the greater will be the number of flowers, and the quality will be proportionate. As a rule young plants are to be preferred, and these that have never had a check from the time the cuttings were put into the propagating bench give the best results. Old and half-

starved plants we would not plant under any circumstances, and it is by far the best economy to set out new plants every spring, or at least as often as once in two years.

To keep roses over winter, take them up after a good hard frost, and heel them in, in some protected place in the garden; lay them close together at an angle of about forty-five degrees; pack the earth closely around the roots, then cover the whole with newly-fallen leaves to the depth of six inches; over the leaves lay some brush or throw over them sufficient earth to keep the leaves from being scattered by the wind. The following spring gradually uncover upon the approach of warm weather, and replant as soon as the soil is in proper condition,—*American Agriculturist.*

Summer Flowering Bulbs.

THE following hints from the *Garden and Forest* will be especially interesting to those of our readers who have selected the summer flowering bulbs:

"An important point to remember in the culture of these bulbs is that their flowering season is the rainy season of their native countries. This is particularly true of the Tigridia and the Gladiolus, which bloom in cool, rainy or winter season, while their period of rest is in the excessive hot, dry weather peculiar to their home. The Calla, a native of the Nile, blooms when the roots are a foot under water in the spring, and rests at low water, when their roots are as dry as it is possible to be and live. The same is the case with many of the so-called Cape bulbs.

"The Gladiolus will grow under any conditions, but it will not grow well. A cool, moist atmosphere is the one in which they delight. Climate alone is what makes them succeed so well in England. Last year we had rain in abundance, with low temperature, and never before have we had such perfection in Gladiolus flowers. We make a mistake in planting our bulbs too early. They should be kept cool and dry, and in a dark room until the first of July, when they will come into bloom about the first of October, throwing up spikes that for number and size of flowers would hardly be recognized as the varieties that bloomed in midsummer. If planted early, so as to flower in July and August, they should be protected against the heat of the sun by a lattice or light canvas covering, and the bed should have a light mulching of newly-cut grass. This will keep the roots cool and is not unsightly. The capabilities of the Gladiolus are only known to those who grow them in this manner. The soil makes but little difference with the Gladiolus. Any soil that will yield good crops of potatoes will be equally good for these plants. If it is heavy, plant shallow, say from one to two inches deep; if light, from four to six inches will be better. It is best to use ground made very rich for some other crop, the previous year, as fresh manure does not suit them.

"Lilies, quite as much as Gladiolus, need a good mulching to keep the root cool and moist. A bed of lilies that has been properly mulched a few years will yield enormously; more than thrice the number of flowers will be produced, and they will be much larger, with better defined colours and of greater substance. A lily-bed should be made in a position where it can remain undisturbed for a number of years, and as long as the plants flower well. An Ascension Lily (L. Candidum), the handsomest of all Lilies, should be planted in July or August, while the bulb is resting. They will live when planted at any time, but will flourish only when planted at the proper season.

"Tigridias are Mexican bulbs, and do not endure our northern sun. Treat them as Lilies should be treated. In October the flowers

remain open nearly the whole day, while in August they close before noon. Give them a moist, cool situation, and they will appreciate the treatment.

"Dahlias are not properly bulbous plants, but they may properly be included in the same list. To be grown well they must have a cool and moist soil, which is usually a heavy one. If the garden does not afford such, assist it by heavy mulching. If Dahlias are grown simply for distant effect, give them plenty of room to branch out and plenty of the plant food, for they are great feeders. If individual blooms are desired, thin out the smaller branches and disbud. We prefer the former treatment, and want the plant to occupy all the space it requires, and to produce as many flowers as it likes."

EVAPORATION OF FRUIT.

WITH many of our farmers it is certainly becoming an important question, what disposal shall we make of our surplus fruits? Even when situated near a good market, there are times of low prices when the shipments of small fruits scarcely pay expenses, and every year the large orchardist finds he has a large quantity of second class apples on hand that are unfit to ship. Many are so situated at such inconvenient distances from the railway, or from a city market, that even with the best quality of fruit land, there is no encouragement to grow fruit.

Now, the fruit evaporator seems to us a solution of the problem, and, by co-operation, several growers might use one machine among them, and so economise expenses.

The annual report of the Secretary of Agriculture for Nova Scotia contains some interesting matter on this subject, and from it we have made the following selection on the extent of this industry about Rochester, N.Y., in view of the importance of the subject at this season:—

Glancing, first, at general facts indicating the character and extent of this new industry: 1,500 evaporators were at work in the neighborhood of Rochester during the year 1887, and some 150 more were started during 1888. These range in capacity from 25 to 1000 bushels of apples per day. The 1500 evaporators in question gave employment, during the autumn and winter of 1887, to 30,000 hands, who earned from 5 to 12 dollars each per week, according to skill and experience. The total quantity of dried apples produced was about 30,000,000 lbs., and their value two million dollars. Five million bushels, or 250,000,000 pounds of green apples, were required for this purpose, from which more than 200,000 tons of water were driven off by the consumption of 15,000 tons of coal. The product finds a market all over the world, but the chief consuming countries are Germany, England, Belgium, Holland and France. Evaporated apples are packed in cases, each containg 50 lbs., and the cost of carriage per case to Liverpool is 30 cents. The same quantity of green fruit sent in barrels would cost $2.50, and canned fruit $2.10. In the case of evaporated fruit, no damage is done even by the longest transit; while fresh fruit suffers enormously, and canned fruit is always liable to ferment.

The refuse of the apples, consisting of cores and parings, is not lost, for these also are dried, and form the basis of all the cheap jellies now so largely manufactured. Twelve millions of pounds of dried cores and parings were exported from America during the year in question. Sliced apples, dried without coring or paring, are

exported in large quantities to France, where they are used in the production of the cheaper wines, and sometimes by the distiller. Eighteen thousand barrels, containing four million pounds of sliced apples, were sent to France during 1887, and of this quantity more than half was furnished by the Rochester Evaporators. The dried apples of Western New York can now be bought in almost every town on the Continent of Europe, while an increasing demand for them is springing up even in such remote parts of the world as Australia and Western Africa. Passing from the general to the particular, it may, in the first place, be remarked that the practice at Rochester is to dry not only apples, but peaches, plums and raspberries.

Green apples are bought in average years, at from fifteen to twenty cents per bushel of 50 pounds. The actual cost of drying averages from twelve to fifteen cents per bushel. The total cost of the dried product is from six to ten cents per lb., and the average selling price seven to twelve cents per lb. One bushel of green apples produces about 6 lbs. of dried apples. The best apples are barrelled and exported as fresh fruit; only the second grade fruit is evaporated, while a third grade goes to the cider mills at an average price of $7\frac{1}{2}$ cents per bushel. Nothing is wasted. The cores and parings are dried and sold for jelly, making an average price of $20.00 per ton. A bushel of apples yields 30 lbs. of meat and 20 lbs. of refuse.

The 30 lbs. of "meat" is reduced to 6 lbs. by evaporation, and the 20 lbs. of refuse to 4 lbs. One pound of coal is used in evaporating one pound of fruit. Peaches are dried both in the "pared" and "unpared" state. The cost of a bushel of good peaches in average years is fifty cents. Each bushel yields $4\frac{1}{2}$ lbs. of dried pared, and 8 lbs. of unpared fruit. The actual cost of drying, in both cases, is fifteen cents per bushel. The cost of the dried "pared" product is 15 cents per lb., and its selling value twenty to twenty-two per lb. The cost of "unpared" dried peaches is eight cents per lb., and the selling value from ten to twelve cents per pound.

Raspberries (black) cost, in average years, six cents per quart. A quart of fruit yields one-third of a pound of dried product. The actual cost ef drying is two cents per lb., and the total cost of the dried raspberries twenty cents per pound.

Plums are only evaporated when so abundant as to become unsaleable. One bushel of green plums produces 8 lbs. of dried fruit, whose average selling price is seven cents per lb. Fruit evaporation is mainly an independent business. The 1500 evaporating establishments already mentioned as surrounding Rochester are all of this character. The farmer indeed owns a dryer of his own, whenever his orchards are large, but he sells for the most part to the nearest "Evaporator."

Apple orchards in Western New York are commonly from 100 to 300 acres in extent, peach orchards from 50 to 150 acres. The Evaporators themselves vary in capacity from 10 bushels to 1000 bushels a day.

The smaller drying apparatus is of the simplest description. It consists of an iron stove, surmounted by an upright wooden casing, the stove being fixed in the basement, and the wood casing on the floor above. The products of combustion are carried away by a flue, while the hot air rising from the stove passes upwards through the box-like dryer, which terminates in a cowl and vane. The dryer itself is fitted with a number of sliding trays made of wire netting, upon which the fruit is placed, and these are replenished by hand as the drying proceeds. Evaporators of the greatest capacity do not differ from the smallest in principle, but the former usually employ steam instead of fire heat.

The cost of the smaller (Parmer's) apparatus is very trifling, and the cost of coal has already been stated as 1 lb. per lb. of evaporated fruit. Mechanical appliances for coring and paring apples are extremely ingenious and very numerous. They are worked by hand and are continuous in action —*i. e.*, one apple is being "chucked" while a second is being pared and a third cored. Peach-paring machines are also in vogue, and cherries, when these are dried, are stoned by a very pretty special machine. None of these mechanical adjuncts to the system of fruit evaporation are expensive, although it must be said they are all specially American productions.

PHOSPHORIC ACID.

THE fourteenth Annual Report of the Ontario Agricultural College contains among other interesting matter some particulars about phosphoric acid which we as fruit growers are interested in, from which we select the following portions:

USES.

Plants require phosphorus for the development of their seeds, and animals also require it for the structure of their bones. When we speak of phosphoric acid in connection with soils, plants and animals, we refer to a compound of phosphorus and oxygen ($P_2 O_5$): it is the white fume that comes from the burning tip of an ordinary match. It is not found, however, in this condition in soils, plants and animals, but it exists, combined with such substances as lime, iron and alumina, forming salts which are termed *phosphates*. To say, therefore, that a soil, a fertilizer, a grain of wheat or a bone contains so much of phosphoric acid means that the acid is present in the combined state of a salt. The most common form is the compound with lime, known as phosphate of lime, or calcic phosphate.

Soils require phosphoric acid for the development of plant life and are often deficient in this regard. Hence the application of phosphates in one of the several forms will often convert an unproductive soil into one of great productiveness.

Three samples of soil lately analyzed here gave 0.31 per cent. of phosphoric acid, while one that was said to be unproductive gave little trace of it. Let us take a soil of average quality as possessing 0.20 per cent. of phosphoric acid. Twelve inches of surface soil will weigh from one thousand to two thousand five hundred tons per acre, and will contain from four thousand to ten thousand pounds of phosphoric acid to the acre. There is in the average soil, therefore, a supply of phosphoric acid (as of other mineral materials) sufficient for many years crop production. That crops cannot thus live upon the constituents of the soil without the regular return to the soil of fertilizers can be explained in two ways: 1st, the plant, through its roots, is brought into close proximity to only a small portion of the soil; 2nd, The food is, for the most part, in an insoluble or unavailable form. Hence we need a much larger supply of plant food in the soil than is required for the immediate necessities of the plant, and some of this food must be in soluble form.

VALUE.

The difference in value, owing to the state of solubility, will be seen at once from the following trade values

used by the analysts of the Eastern States during the present year:

Ph. Acid—	Soluble in water,	8cts.	p. lb
"	Reverted form,	7½	"
"	Fish, fine bone,	7	"
"	Fine med. bone,	6	"
"	Medium bone,	5	"
"	Coarser bone,	4	"
"	Fine gr. r'k ph.	2	"

A value is thus arrived at by considering the solubility, the size of particles, and the source.

Let us next distinguish between soluble, reverted or partially soluble, and soluble phosphates. We shall take the different phosphates of lime. The relationship of the various forms can be most easily seen from the following arrangement:

Pure Acid.	*Soluble Phosphate.*
Water, Water, Water — Ph. Acid.	Water, Water, Lime — Ph. Acid.
Reverted Phos.	*Insoluble Phos.*
Water, Lime, Lime — Ph. Acid.	Lime, Lime, Lime — Ph Acid.

Or, in chemical notation:

H_2O, H_2O, H_2O — P_2O_5	H_2O, H_2O, C_2O — P_2O_5
H_2O, C_aO, C_aO — P_2O_5	C_aO, C_aO, C_aO — P_2O_5

The change from the pure acid to the insoluble form is a removal of water and an introduction of lime. In our rock phosphate, and in bones, the form is that of the insoluble phosphate. The treatment by sulphuric acid changes this, more or less, into soluble phosphate, the lime that is removed being changed into sulphate of lime or gypsum. Superphosphate thus made, therefore, consists of soluble phosphate, gypsum, and variable quantities of the other two phosphates.

In harmony with the above, we can represent the formation of superphosphate in simple form as follows:

$$2\left\{\begin{matrix}\text{Water.}\\ \text{Sulphuric}\\ \text{[Acid.]}\end{matrix}\right\} + \left\{\begin{matrix}\text{Lime}\\ \text{Lime}\\ \text{Lime}\end{matrix}\right\}\text{Ph. Acid} =$$

$$\left\{\begin{matrix}\text{Water}\\ \text{Water}\\ \text{Lime}\end{matrix}\right\}\text{Ph. Acid.} + 2\left\{\begin{matrix}\text{Lime.}\\ \text{Sulphuric}\\ \text{[Acid.]}\end{matrix}\right\}$$

Or, in chemical notation:

$$2\left\{\begin{matrix}H_2O\\ SO_3\end{matrix}\right\} + \left\{\begin{matrix}C_aO\\ C_aO\\ C_aO\end{matrix}\right\}P_2O_5 =$$

$$\left\{\begin{matrix}H_2O\\ H_2O\\ C_aO\end{matrix}\right\}P_2O + 2\left\{\begin{matrix}C_aO\\ SO_3\end{matrix}\right\}$$

Sulphuric acid and insoluble phosphate of lime react on each other, forming soluble phosphate of lime and sulphate of lime or gypsum.

Bone superphosphate, or dissolved bone, is considered more valuable than mineral or rock superphosphate. The mixing of lime with superphosphate tends to change the soluble phosphate back to the less soluble form, the *reverted*. Decaying organic matter, whether in a compost heap or in a soil, will have the effect, to a small extent, of changing the insoluble forms to soluble.

Phosphates are of most service with organic fertilizers on black humus soils, along with farm-yard manure or nitrogenous fertilizers, and are of less benefit in connection with lime.

Phosphatic fertilizers give good results when applied to pastures, cereals and roots, especially turnips.

SOURCES.

I. Farm-yard manure contains from 0.15 to 0.75 per cent. of this acid, having an average of about 0.50 per cent., or 10 lbs. to the ton. Poultry droppings have about four times as much.

II. Ashes (fresh and leached) have from ¾ to 1¼ lbs. per bushel.

III. Fresh bones (sold as crushed bone, bone meal, or float bone, according to texture) should contain

about 4 % of nitrogen and 25 % of phosphoric acid.

A good fertilizer may be obtained by mixing 500 lbs. of bone with 25 bushels of fresh ashes per acre.

IV. Bone ash, the ashes obtained by burning out all of the organic matter. Little used in Ontario.

V. Boiled or steamed bone, the refuse bone from which most of the organic matter has been boiled or steamed for glue, this is more easily ground and made into superphosphate than III.

VI. Bone, char, animal, charcoal, bone black, or bone charcoal, the refuse charred bone after being used for the refining of sugar. A sample analyzed here gave 30% of phosphoric acid.

VII. Bone superphosphate or dissolved bone, made by treating bones (especially V. or VI.) with sulphuric acid—15 to 25 per cent. phosphoric acid.

VIII. Guano contains from 10 per cent. to 30 per cent. phosphoric acid Buy this only from reliable dealers on guaranteed analysis.

IX. Dried blood and scrap have 3 to 10 per cent.

X. Apatite—Canadian, containing about 80 per cent. of phosphoric of lime, should have over 35 per cent.

XI. A good superphosphate should have about 25 per cent.

XII. Marls: The presence of phosphoric acid greatly adds to their value; those we have examined have never given much more than traces.

XIII. Basic Slag, Thomas Slag, Thomas Scoria, Phosphate Meal: These are all names for the finely ground slag from smelting iron containing phosphorus. The phosphorus is removed by lime and the slag therefore contains phosphate of lime. It is being experimented with in Europe, promises well, sells in Eastern States at $15 per ton, and is claimed to be the cheapest available form of phosphate. It contains an excess of caustic lime.

From Our Exchanges.

An Apple Orchard as a Commercial Enterprise.

THE following paper shows the profit in the apple culture in the Province of Quebec, and if profitable there, it must be still more so in our more favored Province:

"I think we must admit that apple culture is an industry belonging to the farm, and that the bulk of the apples must be grown by the farmer.

"To the farmer who has land suitable for an orchard, and who is desirous of entering into fruit culture, the question naturally arises, which is most profitable, to grow apples or cereals? He may read the different horticultural reports of the Provinces and States, and in almost all of them he may find reports on fruit culture by different men, who assert that orcharding is more profitable than growing grain. But as to what per cent. it is more profitable he is left to draw his own conclusions.

"You ask the farmer what is the net profit on an acre of oats or barley, he answers, 'That depends a great deal on the season.' It varies all the way from $5 to $20, and sometimes there is no profit. And so it is in all agricultural and horticultural pursuits. It is impossible to say what percentage an orchard will yield, or what net profit an acre of oats or barley will yield. The majority of farmers, when they have realized $12 to $15 net profit on an acre of oats or barley, feel quite content.

"Would the orchardist feel contented to realize that amount per acre, or in the same ratio for the money invested? I think not!

"Neither the horticulturist nor the farmer, as a rule, keeps an account-book that would enable him to give the amount of expenditure and receipts of his orchard. Hence the reason why it is we so seldom see any figures or facts that would enable us to come to a conclusion as to the result of an apple orchard as a commercial enterprise.

"For the benefit of those who are seeking information, and would like facts and figures of the returns of an orchard 25 years old, I will give the receipts for the last four years:

1884	2,871	Bushels	$1,132.84
1885	1,477	"	583.90
1886	1,461	"	758.50
1887	2,015	"	1,062.05
Total	7,824	Total	$3,537.29

"Average of orchard per year, $884.32 ; average per acre, $88.43. Deducting, say 25 per cent. for expense of picking, packing, marketing and care of orchard, it would leave a net profit of $66.33 per acre per year.

"These figures compared with figures in growing grain give a far better result.

"Notwithstanding that this orchard was planted 25 years ago, on a stony piece of land, prohibiting cultivation other than top-dressing with manure, and before any reports as to the most hardy varieties for this Province had been published, and the fact that the orchard contains more than 30 varieties of apples, and some of the varieties almost worthless, I think the above figures show that orcharding as a commercial investment has given fair profits.—N. C. Fisk, *before Montreal Horticultural Society.*

Girdling Grape Vines.

I have practiced girdling more or less for many years to test its value in a scientific and economical way. The numerous experiments made in the college vineyard lead to the following results:

1. No injury to the vines girdled has ever been detected, even where the girdle was made on the main trunk near the ground.
2. The time of ripening is generally hastened by one or two weeks.
3. Careful sugar tests show no injury to the quality of the fruit.
4. The fruit was larger, more beautiful, and sold for from three to five cents per basket more than that from ungirdled vines.
5. The best time to perform the work has been found to be early in July.
6. For reasons of economy of the forces of the vine, only a part of the cane of each vine should be girdled and only those that are to be cut away.
7. Annual arms should be grown for the purpose of girdling to bear the fruit, and a few unbearing ones fruit for spurs to produce the canes for next year's girdling.
8. The best results were obtained when the ring of bark taken out was from one-eighth to one-quarter of an inch wide, according to the size of the cane girdled.
9. Good results were obtained when wires were twisted about the canes, but only when twisted very hard with pincers. For this purpose about No. 20 annealed was used and the work done late in June.
10. From our experience we believe that girdling will result in profit to the vineyardist, and in much pleasure to those who are growing choice late grape varieties.

In our practice we have worked out a method of girdling that may be applied to any system, but is most satisfactory where one cane is allowed to grow ungirdled on one side of the vine, but not permitted to grow fruit, while the cane of the previous year has been girdled and is producing fruit. —S. T. Maynard, *Mass. Agric. Coll.*

Caragana Arborescens.

Caragana Arborescens, the Siberian Pea-tree, is an old inhabitant of gardens, and a perfectly hardy small tree, of good habit, and an unfailing bloomer at this season of the year when the erect branches are covered with its handsome, bright yellow, pea-shaped flowers, borne in fascicled clusters from the axils of the compound leaves. These have spinescent stipules, and consist of four to six pairs of small, oblong-oval vilous leaflets. This tree, which will grow to a height of fifteen or twenty feet, is often found in nurseries grafted as a tall standard ; but it makes a more beautiful object when it is grown on its own roots and is allowed to send out its branches from near the ground.

The shrubby "*Caragana fruescens*" is a native of Siberia also, and a desirable plant. It has larger solitary flowers of a paler yellow, and smooth leaves with broader leaflets. It flowers a few days earlier than C. arborescens, and is equally hardy. Both species are easily grown from seed.—*Garden and Forest, June 5th.*

Mixed Manure.

The experiments at stations and by individuals continue to confirm the old opinion that barn manure is more universally useful and efficient under all circumstances than any of the special fertilizers. In rating its value by analysis, the carbonaceous matter which it contains is not commonly taken into account, but its abundant presence is one reason why it is so generally beneficial to all soils. It operates in several ways, among them in the mechanical condition given to land, and in promoting the absorption of moisture and essential ingredients of fertilizers. It greatly assists in improving the texture of many soils. With these qualities, it is well to mix with yard manure various other substances. Inquiry is often made as to the best way to apply bone-dust, plaster, marl, air-slaked lime, superphosphate, etc. In most cases the easiest way is to mix them through heaps of manure, in their alternating layers ; and if there is plenty of the manure, and the quantity of the other ingredients is small, the more perfect the intermixture can be made, the thinner and more numerous the layers, the more perfectly they will be diffused through the manure, and the less labor will be required in working over the pile of manure.—*Cultivator.*

Ink for Zinc Labels.

A legible and permanent black ink for labels may be made as follows: Verdigris, one ounce ; sal ammoniac, one ounce ; lamp black, half an ounce ; rain water, half a pint. Mix in an earthenware mortar or jar, and put up in small bottles. To be shaken before use and used with a clean *quill* pen on bright zinc.

Ruby Currant.

Moore's Ruby Currant.—Mr. Hooker—This currant originated in Rochester, N.Y., and has borne with us for several years. It was produced by crossing the Cherry with the White Grape, and shows characteristics of both parents ; is of fine quality and unsurpassed for family use. It is about the size of the Victoria, and is much more productive than the Cherry.

It has surpassed Fay's Prolific with us, but I would not say that it would do so with others. I think it should be recommended for amateur use.

Mr. Willard—I think Moore's Ruby the best red currant for table use I have ever seen, and I endorse all Mr. Hooker has said concerning it.

Mr. Hubbard—I saw this currant fruited on the government grounds at Washington, and was favorably impressed with it.—*Vick's Report of N. Y. Horticultural Society.*

The Apple Picker.

THE question whether it was advisable to use an apple picker was answered at the meeting of the N. Y. State Horticultural Society, by Dewane Bogue of Medina, who said that a grower told him that a buyer refused to buy his apples because they were gathered with a picker. Another buyer came along and paid five cents more a barrel for the same apples because they were not bruised. Mr. Harris, in giving his experience with the picker, said that with that article apples could be gathered at half the cost of hand work and with less damage to the fruit.

The Use of Coal Ashes.

EVERYTHING grows well under a mulch of coal ashes, provided that the plant leaves are not covered, and that the ashes be stirred after rains, during the growing season. Without this they pack so as to exclude the air. In planting the seeds we cover them with soil or leaf mould. We have tried coal ashes, thinking that the young seedlings might push through the easily broken inch of ashes. But very rarely has a plant appeared through such a covering, because of too close exclusion of air, some being indispensable at the moment of germination.—*Chicago News.*

A Profitable Use of Apples.

SOME of us are feeding our apples to stock. I feed them to horses, pigs and poultry. For the general purpose horse of the farmer I know from experience that apples are a valuable food. I have had horses that were in a very low condition from worms entirely freed from this trouble by the use of apples, and my horses always improve in the fall when running among apple trees, where they eat all they want. I believe that a horse not at hard work would do as well on 4 qts. of oats and a peck of apples as on a peck of oats. If this were so, it would give apples a feeding value of about 24c. per bush. Now if the windfalls and refuse apples are of any value, why should not good sound fruit be of still greater food value? My pigs eat apples when they don't eat meal. To about 50 hens I feed 2 or 3 qts. of apples daily, crushing them a little with the food. The hens seem to fairly revel in them.—E. H. HUTCHINSON.

Value of United States Fruits.

THE census reports, which are, of course, only approximative, give the following value of orchard products in the United States: For 1886, estimated, apples, $50,400,000; pears, $14,130,000; peaches, $56,135,000; grapes, $2,118,900; strawberries, $5,000,000; other fruits, $10,000,000. Total, $137,783,900. In 1880, the census report made the whole amount $50,876,154. The gradual increase since 1850 was about the following: In 1850, $7,723,000; in 1860, $19,991,000; in 1870, $47,335,000. With the only exception of the decade between 1870 and 1880, the amount has much more than doubled in each decade.

The Crandall.

MR. PARRY asked about the Crandall currant. Mr. Trowbridge was not prepossessed with it; had seen it but never fruited it: a black currant originating in Kansas. Mr. Teas—"It belongs to the black currant family, and is similar to it for cooking. I consider it valuable. Common people will be reasonably well satisfied with it for eating. It is questionable however, whether it is a hybrid with our common fruit."

Growing Black Walnuts.

MR. GEORGE VAN HOUTEN, who is regarded as good authority in such matters, says if the husks are removed, it is safe to count that about 1,000 nuts will make a bushel. With the husks, from 500 to 600 per bushel would be a reasonable estimate. Some years many of the nuts are abortive, while other years nearly all will grow. A fair estimate of their germinating qualities can be made by cracking a few, as nearly all plump, natural appearing kernels will grow under favorable circumstances. It is best to plant rather more nuts than trees are wanted for; like most nut-bearing trees, the walnut does not transplant easily. After being gathered, the seed should not be allowed to dry; if shipped a distance the nuts will keep from drying out with damp moss about them. In the fall they can be planted at once, and covered three or four inches deep in well-prepared ground. If planted in the spring, over winter spread the nuts two or three layers deep, mixed with earth or leaves, and covered lightly; if the ground is moist, at least part of the rains should be kept off, planting as soon as the frost is out of the ground. Good cultivation should be given for the first few years, after which but little further care.—*Iowa Homestead.*

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

WATER LILIES ON THE LAWN.—*Orchard and Garden* suggests a very pretty plan for growing *Nymphæa odorata*. Several tubs, coal oil barrels cut in two will answer, may be sunk in the ground quite close to each other in a group, the spaces between them being filled with Calla lilies, tuberous-rooted Begonias, Caladiums Ferns, Grasses, etc. In planting, fill the tubs about half full of a mixture of good loam and thoroughly rolled cow manure in equal parts, in which imbed the roots, and cover the soil with about half an inch of clear sand. Fill the tubs slowly with rain-water, and replace the loss by evaporation.

Nymphæa Devoniensis is commended as the queen of all water lilies, surpassing in brilliancy of flower if not in size of leaf, the famous Victoria regia. It is a night bloomer, each flower opening from 8 p.m. to 10 a.m. for three nights in succession. Under favorable circumstances a single plant of this variety will, in one season, cover a circle of twenty feet across, with leaves twenty-five inches in diameter, and flowers twelve inches from tip to tip of petals. The flowers are rosy red with bright scarlet stamens.

CARELESSNESS in handling Paris green and London purple is likely to follow the wholesale use of them. The dry powder rises almost imperceptibly. Breathing this will introduce arsenical poison into the system through the lungs. In case of accidental poisoning occurring, the best antidote to administer is the hydrated sesqui-oxide of iron, which should be taken at once.

BENEFITS OF SPRAYING.—Mr. A. C. Hammond, Sec'y Ill. Hort. Soc'y, states that, as a result of spraying one portion of his apple orchard in 1887, he gathered 500 bushels of apples, of which seventy-five per cent. were perfect, and eighty-five per cent. marketable; while from the same number of trees in the other orchard he had not a peck of perfect fruit. Let our readers give us facts and figures, until the question is settled to everyone's satisfaction. The writer has used fifteen pounds of Paris green this season on his orchard, while some neighbors say they have not confidence enough in it to go to the expense and trouble of applying it at all.

ROSEBUG.—The *R.N.Y.* recommends spraying with pyrethrum

water for this beetle, known scientifically as *Macrodactylus subspinosus*. The method is: Wet two tablespoonfuls of the powder with water and mix into a paste. Stir this into two gallons of water, and apply with a force pump in a fine spray.

Niagara Falls Park.—The *Garden and Forest*, a journal of the very highest standing and of the most correct taste in matters of landscape gardening, devotes the editorial of a recent issue, to warning the public against allowing this beautiful park to be marred by the erection of museums, monuments or buildings for educational ends, as being wholly out of keeping with the object with which the park has been set apart. Constant attempts are being made to utilize the wonderful privileges of the place for private ends, or to suit a vulgar taste. In the memorial to the Governor of New York and to the Governor-General of Canada, the great point made was that "objects of great natural beauty and grandeur are among the most valuable gifts which Providence has bestowed upon man. The contemplation of them elevates and informs the human understanding. They are instruments of education. They conduce to the order of society. They address sentiments which are universal. They draw together men of all nations and thus contribute to the peace of nations."

Notwithstanding this, it appears that a memorial has already been presented to the New York State Legislature at Albany by the Niagara Hydraulic Electric Company, asking for the privilege of building cofferdams above the cataract, erecting machinery and boring a tunnel under the bank of the river, and this has passed the committees of both houses. The bill has been checked by the Senate, but its existence shows the constant danger to which the attractions of this delightful reserve is subject.

Spraying for the Plum Curculio.

At a recent meeting of the Central Illinois Horticultural Society, Prof. Forbes, the State Entomologist, gave an address giving the result of his investigations and experiments in reducing the extent of the ravages of the plum curculio by means of spraying. According to the *Prairie Farmer's* report, Prof. Forbes stated that it had been found by careful experiment, that the mature insect subsisted on dead and decaying leaf vegetation until the green leaves and fruit appeared. One pound of London purple or Paris green to 100 gallons of water was found to injure the foliage of the peach and plum. Experiments showed that one pound to 500 gallons of water destroyed the plum curculio in ten days, and this solution was recommended as proper for the peach and plum. The stronger medium killed somewhat quicker. The advice in general was to spray early in the season with a solution found not to weaken the foliage, operated on the basis of say, one pound of Paris green or London purple to 300, 400 or 500 gallons of water, as might be found not detrimental to the leaves of a species. There seemed no doubt in the mind of the speaker that the curculio could be killed in the early season by the means recommended. This accords with our experience at Grimsby, that where the poison has been applied early enough in the season, and repeatedly enough, almost the entire plum crop can be saved; but when delayed until the plums are formed, and cleared of the calyx, the damage will be done before the parent beetles can be destroyed. We await further evidence on this important question.

QUESTION DRAWER

The Pithy Gall of the Blackberry.

53. I ENCLOSE to you by to-day's mail a peculiar growth found on a Brinckle's Orange raspberry cane in the garden of Mr. J. H. Davison, of this town. Mr. Davison showed it to me some days ago, when I suggested that it be sent to you for examination and description in the HORTICULTURIST. The cane upon which it was found was dead and when the knot was cut open there was found in it a small black fly about a sixteenth of an inch in length. Please give us your opinion.—W. A. BROWNLEE, *Mt. Forest.*

This peculiar growth is a gall caused by a gall-fly belonging to the family *Cyripidæ*, and known to our entomological friends as *Diastrophus Nebulosus*. The tumor is formed by the unnatural growth of the vegetable cells, which is produced by the depositing of the eggs. The tumor or gall is soft and spongy, and the one sent us is shown in the engraving, *fig.* 53 *a*, with little holes, through which the flies have escaped. The section *b* shows the interior, with several oblong cells, about an eighth of an inch in length, each of which has contained a larvæ, or young grub, one of which is more plainly shown at *c*. These are about one-tenth of an inch long, white, with reddish mouth; they remain through the winter safely hidden in these galls, and change to flies in the spring-time. The fly is described as black, with transparent wings and red feet and antennae. They more commonly attack the blackberry canes than the raspberry, but are not very troublesome, as they are destroyed by parasitic insects and by birds.

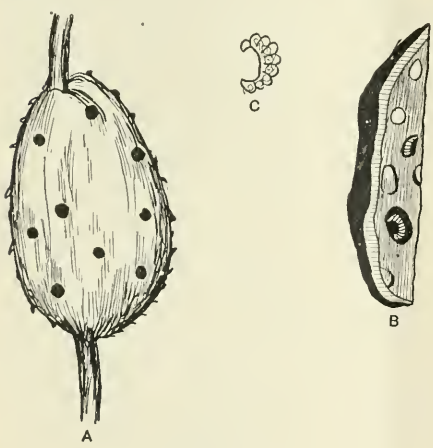

Fig. 53.

Kerosene for Bark-Lice.

54. SIR,—A friend of mine in Toronto gives the following method of dealing with the Oyster Shell Bark Louse nuisance:—

"In early spring, before the buds commence to swell, apply crude petroleum to the affected parts."

He assures me that no injury whatever is done the trees by this treatment, and that when growth commences in the spring, the outer bark of all twigs so treated will peel off, taking with it all the shells with its eggs, and leaves the inner bark smooth as if polished.

Will you please give your readers your opinion of this—to me—new treatment.—THOS. BEALL, *Lindsay.*

We have tried this remedy and find it certainly most effective in destroying the bark lice. Not a single one remained to tell the story of the disaster. But the bark of the tree in places was totally destroyed also. On one tree three applications were made, washing the bark thoroughly with a cloth dipped in the oil; on another only one application was made. On the former the bark was so badly killed that the tree must eventually die; on the latter it was only killed in places on the under side of the limbs, where it would naturally collect.

The only safe mode of applying kerosene is as an emulsion with soap and water. A half pound of soap, dissolved in a few quarts of water, is set on the stove until it boils. Then while boiling add two gallons of kerosene, stirring at the same time, and a perfect emulsion will be formed. This may be applied with an old broom, or a scrubbing brush, after first scraping off the loose bark,

and will be found most effective, and quite harmless to the tree.

We have not had very much success with washing-soda and water, nor even with caustic soda and water. The latter was applied so strong that it burned the bark and leaves, and yet we find the insects still abundant on those very trees.

Frosted Grape Vines.

55. GRAPES are all gone here. What do you advise in the matter? Leave old canes to throw out fresh shoots or cut them back for fresh canes from the root?—A GODERICH CORRESPONDENT.

The wholesale destruction of the young grape wood by frost such as has happened this year to vineyards in many parts of the country is so unusual that we cannot speak from experience. In our opinion the best plan is to wait until the new growth starts, when it will be plain how much of the vine is destroyed.

Ants in Dooryards.

See Question 50.

56. A writer in *Orchard and Garden* recommends bisulphide of carbon as a reliable remedy, and gives the following method of application as very successful:

"A large horse blanket was saturated with water and placed over as much of the nest as it would cover, a tablespoonful of the bisulphide having first been poured into each of some 20 holes. The blanket was allowed to remain for about 15 minutes and was then removed. A long-handled torch was then made with a rag saturated with kerosene tied at the end of a broom, which was ignited and the vapor at the mouth of several of the orifices was exploded. For the next fifteen minutes successive pops were noticed at the mouths of many of the orifices, at many in fact in which the substance had not been poured, showing that the vapour had thoroughly permeated through the subterranean galleries of the nest. The object of exploding the vapour was to drive it further through the intricate ramifications of these galleries."

The Kniffen System of Grape Pruning.

57. PLEASE give a short account of the Kniffen system of grape training. This system is referred to in the report of this year, but from some cause, perhaps the want of a diagram, it is not to be easily understood. Whether one or two arms at two and a half feet and at five feet are to be grown does not clearly appear.—T. ALLAN, *London, Ont.*

The Kniffen system is a simple one, and requires less labor than the Fuller system of grape pruning, because the young bearing shoots hang down

Fig. 54.

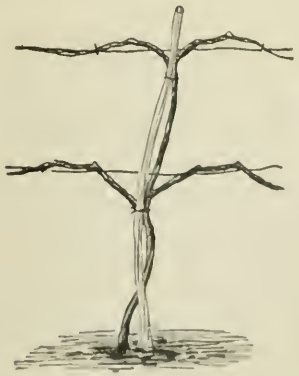

Fig. 55.

and do not require much tying. But it is not adapted to places where vines need laying down in the winter,

and to our taste, a vineyard trained in this way is less sightly than the latter method.

We here give an illustration Fig. 54 of a three year old vine trained on the Kniffen system, according to which four main arms are allowed to grow, two at each vine. These four main laterals remain from year to year, the young wood being cut away each fall or spring, as in Fig. 55.

Force Pump.

58. I would like to know what is the best kind of force pump to use in a small orchard of apple trees, of say half to an acre in extent for the purpose of spraying with Paris green.—A. Ronald, *Mincsing.*

We think the hand force pump made by Messrs. Beecher Bros., London, very satisfactory.

Hardy Crabs.

59. Please give a list of valuable Hardy Crabs.—A Subscriber.

Reply by Mr. Charles Gibb, Abbotsford, Que.

My choice of crab apples are (in order of ripening).

1. Early Strawberry (of Minn), ripens with Red Astrachan.

2. Whitney's No. 20 (of Illinois).

3. Gibb (of Wis.) from Yellow Siberian by Fall Greening produced by G. P. Peffer, of Pewaukee, Wis.

4. Brice's Sweet (of Wis.) from Transcendent and Bailey's Sweet.

5. Orange (of Minn).

6. Lake Winter (of Wis.) from J. C. Plum, of Milton, Wis.

My choice of three kinds would be (in order of preference) Whitney's No. 20, Gibb, and Brice's Sweet.

Red Flowering Shrub.

60. Do you know of some shrub for the lawn with red flower or berries that would be more desirable, as flowering over a longer period than Paul's Red Thorn.—A. R., *Mincsing.*

Paul's Double Red Flowering Thorn is one of the very prettiest of small trees or shrubs that we know of for the month of June. The Japan Quince is a very showy flowering shrub, blooming in May. For showy red berries hanging through the winter, we commend the "Black Alder or winter berry," a native of swampy places, if a suitable spot can be found.

OPEN LETTERS

From Mr. R. McKnight. A Correction. Boxes for apple-shipping.

Sir,—The Horticulturist came to hand this morning. On opening it I was surprised to find my own "phiz" looking me in the face. I suppose there is more or less vanity in the composition of every man, and mine was not a little excited by your flattering notice.

I see a typographical error in my letter as published. It was not "three or four barrels" I had sent me to London, but three or four *hundred* barrels. The fact is I had two lots sent me. The first lot was sent forward in *bushel boxes* and the second in barrels as directed. The boxes sold quite as well as the barrels. I got the idea of sending in boxes from the Australians, who sent their fruit to the Colonial in this form, and they arrived in London in excellent condition. — R. McKnight, *Owen Sound.*

The Crandall Currant. Use of Paris Green and London Purple.

Sir,—In looking through the welcome June number of the Horticulturist, which was delivered this morning, I notice your article on the Crandall Currant, that you have received a plant and also a twig of the green fruit, which twig of fruit I should like to see. I should have reported to you sooner on the Crandall Currant bush, only I was waiting to see if there would be a bloom upon either of my two plants. They are growing nicely. I planted them out very carefully when I received them, and I had them protected the night of the hard frost, so that they did not get hurt at all. I am very pleased so far with action and appearance. I will report again in regard to them. I see also in this number some remarks upon the good qualities of London purple vs. Paris green. Now I will give a little account of experience

that I had of them this season. Early in the spring I got a sprayer and used Paris green once just about the time the bloom was opening. Then I saw the advertisement by a nurseryman of the superiority of London purple over Paris green, so I sent to him and got a force pump and two pounds of London purple. I did not put in as much of the London purple as was recommended to be safe. I sprayed the trees once and it soon showed itself; it must have killed the curculio for it killed the leaves, and where it dropped off the trees on the currant and gooseberry bushes t burnt in spots like vitrol would. Perhaps it was too strong. The next time I'll put it on weaker, but I don't think the trees will require it this year.—Thos. G. Gaston, *Hamilton.*

The Seedless Apple.

Sir,—I see on page 142 of Canadian Horticulturist my letter, etc. about my new apple, also Prof. Panton's statement. Mr. Panton seems to be sceptical. I will ask you to refer him to June number of *American Garden.* He there can see a plate of this fruit taken from a twig sent to Mr. L. H. Bailey, of Cornell University, Experiment Station, Ithaca, New York, at blooming time. Of course it is impossible for me to write and send samples to an army of sceptics. What I have stated on page 142 of the Horticulturist is true, and I cannot help the unbelief of Professor Panton or Professor any body else, unless they are disposed to believe ten or twelve good men on oath. I would like to have it tested in Canada, but as to sales of scions I could not half way supply our own home wants this season. I had to return over fifty orders for good lots and every scion that would do was cut. I sell at $5.00 per hundred. I would like for Prof. Panton to write me a letter. I will answer him kindly.—G. W. Robinette, *Flag Pond.*

Too Much Paris Green.

Sir,—I duly received your post card of 16th May, and also by same mail the four strawberry plants. They were nice, healthy plants, carefully packed, but whether they had been delayed *in transit* or not, of course I could not say, but they were unquestionably dry. I at once put their roots into tepid water and kept them immersed seven hours, and in evening planted them carefully, and have given them good attention since. They are doing well.

The May number of the Canadian Horticulturist duly reached me. Its contents have given me very great satisfaction. In it there is, *inter alia,* much seasonable information about curculios and codling moths—antagonists that I have been fighting for a good while and not always successfully, and I feel assured that many fruit growers will be very thankful for it. I had, however, anticipated the advice the day before, and had given all my fruit trees that were in blossom, plums, pears and apples, a good spraying of Paris Green, ¼ oz. average to the patent pail, exactly the proportions recommended by Mr. Fletcher, of Ottawa, and others, and hope to secure my fruit this year from these ruthless spoliators.

Three years ago my orchard suffered considerably from an overdose of Paris Green, arising from the indefinite nature of the instructions given respecting the amount required to a given quantity of water, "a teaspoonful." Now this "teaspoonful," by actual weight is nearly 1 oz. average, it is, therefore, about eight times the amount now deemed sufficient to save the fruit from the destroyer. It is not surprising, then, that the result of the larger dose was so disastrous.

This spring, owing to the frequent and heavy rains, I have had to make several sprayings, but whether owing to the weakness of the solution, or the repeated washings, the foliage, so far, has not suffered as I feared it might. What effect on the marauders this may have, it is too soon to say, but as yet I have only seen one curculio mark on the fruit of eight plum trees.

I will be glad to report results as soon as ascertained.

The sharp frost of last Tuesday night has done much damage in this city and neighborhood.—J. L. Thompson, *Toronto, June 1, 1889.*

Plants Tested in Huron County.

Sir,—I suppose it is expected that we should give a report of plants received, occasionally. Since I last wrote I have had the Niagara grape, and it has done well, also the Storm King Fuchsia, but has not blossomed yet; I hope it will be true to name. The Jessie strawberry has not increased much. The Golden Queen Raspberry is a fine berry and good cropper, but it suckers too freely; and this year the Vergennes grape was growing nicely, but alas! on the night of the 22nd inst., we had a sharp frost, which killed off the young shoots, and did a great deal of damage to all my grapes; I don't think it was severe enough to hurt the apple, pear or plums. I had a fine show of grape clusters, and in fact most of the fruit of all descriptions had plenty of blossom.

The crops of all kinds of grain, as well as the meadows, are looking well, but the weather has been cold this last week and has checked the growth.

I see in the last Horticulturist an item on the English Sparrow, also in the Annual Report, with various means of keeping them down. I think a simple and inexpensive method that we used to adopt in England when I was a boy, is about as good as any, that is, trap them with a downfall, thus:—Take a batten door, or something of the sort, and set one edge on a stick about two feet long, tie a cord on one end of the stick, and when there are a number under it (which will soon be if you scatter small grain plentifully), pull the stick out. Of course one must stand off a little distance and watch them. If every one would wage war on them they could be kept within bounds, but many people don't care how plentiful they are.

Can you tell me anything about the Ritson pear or Saunders plum that some agents are pushing, or are they about on a par with the Pocklington grape, not a single vine of which but gets killed to the ground in the winter in

this section, and almost all others stand well; they were sold at a big figure.

Again the Russian Apricot was sold at $1 each, and not one out of scores is living, and this was something "remarkably hardy"; now they are pushing this pear and plum at a big price.—WALTER HICK, *Goderich, Ont.*

The Saunders Plum.

SIR,—In reply to the question by Mr. Trotter, of Owen Sound, respecting the Saunders Plum, page 168, June number CANADIAN HORTICULTURIST, you state that the Saunders Plum was first brought into public notice at the meeting of our Association at Barrie in 1884. Permit me to say that I think this is an error on your part, as it was first brought to the notice of the Fruit Growers' Association at our meeting in St. Catharines, commencing 29th August, 1883. The plum was then over-ripe.—Yours very truly, THOS. BEALL, *Lindsay, 19th June, 1889.*

NOTE.—Mr. Beall is correct. In the fruit committee's report on page 183, Report for 1883, will be found the following words:—"There were very good specimens of a yellow seedling plum, grown by John Aris, Belleville. They are of excellent quality, and worthy of extensive trial." It was not named until the following year at Barrie.—EDITOR.

The Forestry Report.

SIR,—In Mr. Phipps's letter in the May number we read, "Such crops of wheat, such weight of grass per acre, etc. A brother of mine writing on last year's harvest, says, "Last summer was very wet and dull, the corn (grain) was very small, for we had very little sunshine and the corn did not get fit. With respect to such crops of grass, those who have to be off to the cities or towns, as the writer has had to, and be clear of their limits not later than five o'clock in the morning with the load of night manure, know something about what underlies such crops of grass other than the planting of trees. And the contrast made by Mr. Phipps between the Canadian and English farmers is, in my opinion, very misleading, for there are any amount of as good farmers in Ontario as are to be met with anywhere.—T. B. WHITE, *Clarksburg, Ont., June 8th, 1889.*

ORIGINAL POETRY.

The Crofter's Farewell.

A TORRENT of imagining,
Rise in sorrowful array,
As we hear those weeping Crofters sing
Their wail of Highland melody!

See them gather on the strand
Sighing their farewell o'er and o'er,
Shall ever that heart-riven band
Return? sad waves reply, "No more!"

Lochaber! thy sunny braes shall never
Fade from our vision, in weal or woe,
Death only shall our fond hearts wither,
But Freedom beckons, we must go!

Away to the land that is owned by the free!
Away to the glorious West,
Away from all toll-worn penury
Where lordly power oppressed!

Good shepherd lead, with gentle hand,
Soothe each wild and wasted soul,
Guide them in a distant land,
Be thou the Pilgrim's Sentinel!

Ah, see their now deserted cots!
Dark and green, their white-washed walls.
Casements let in the drowsy bats,
From chimney clefts the ivy falls!

See their little "Garden Patch,"
Thorns and thistles usurp their sway,
Ripp'd from the roof the cosy thatch,
All's desolation and decay!

There's where the spacious ingle stood,
That yawning ruin, dark and gray,
Where the old cotters' happy brood
Were gathered every Sabbath day!

Grandsire's chair stood in that nook,
And by the light of the crackling log,
He read aloud from the holy Book,
Then raised a loving song to God!

Where now is the good old man of God,
Who fill'd love's seat in days gone by,
He sleeps beneath the moorland sod,
And the skylarks sing his requiem high.

The grave shall keep its hallowed store,
In mountain, plain or dell,
Their quickened clay shall rise and soar
At th' evicting trump of Gabriel!

GRANDMA GOWAN.

May.

WITH floral sweets the air is redolent,
And beauty breathes a soul through every spray,
For now is Spring, and Spring's divinest—May.
And every sense is eager turned, intent
To catch her voice and touch beneficent,
Apollo charmed now lengthens much the day,
So lover-like he thus prolongs his stay.
The coy Queen weds—'tis Power and Beauty blent.
Now zephyr gently summer's cradle rocks,
The green boughs waves to part the sun's bright hair,
That so his child may sport the golden locks
Which warmly fall upon the infant fair.
Earth all unconscious that she suffers ill,
Sings, laughs and loves as though 'twere Eden still.

S. P. MORSE, *Milton.*

RASPBERRY—SHAFER'S COLOSSAL.

THE

Canadian Horticulturist

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THE SHAFFER.

PERHAPS as fruit growers we are inclined to judge of all fruits too much from a commercial standpoint and to give too little prominence to varieties that are commendable for the home garden. Every farmer in Ontario should have a fruit garden for home use, and we shall be advancing the end of our Association as much by naming the varieties suited for this purpose, as by indicating those which are most desirable for the market garden.

The Shaffer is a purple berry and a chance hybrid of the red and black raspberries. It was found on the farm of Mr. Shaffer, of Wheatland, Munroe Co., N.Y., and was introduced to the public by Mr. Chas. Green, of Rochester. The bush much resembles the red raspberry in general habit of growth, but does not send up suckers; it is propagated in the same manner as the blackcaps, viz., by striking root at the tips. It is a colossal grower, reaching up its huge canes six feet or more, and needs to be cut back once or twice through the season to keep it in bounds, and to cause it to branch freely. The size of the berry is considerably above that of the Gregg black raspberry, and often even larger than the Cuthbert red, but if those on the table before us, grown on our own fruit farm, are a fair average, the colored plate in this issue is overdrawn. It is correct enough, however, in having some twenty berries on a single fruiting branch, and this gives some idea of its productiveness, a strong point in its favor; but our own samples do not average more than three quarters of an inch in diameter, whereas the artist has made them to measure an inch. Still it is quite possible that in more favorable seasons and in very rich soil the berries might attain the full inch, as represented. The Shaffer is undoubtedly one of the most desirable raspberries for home use, for the following reasons: (1) It is an excellent bearer, continuing in season a long time. (2) The quality is excellent, and continues to improve as long as it hangs

upon the bushes. For table use its flavor is peculiarly agreeable, and if left to hang until dark in color, and perfectly ripe, and served with sugar and cream, it is a most delicious dish. Those who have tried it in jams, pies. jellies, etc., say that it is unsurpassed, (3) It is very hardy, and is reported to have safely endured a temperature of 40 degrees below zero. (4) Its large size and ease of cultivation tend to make it a general favorite.

For market purposes, the Shaffer cannot be so confidently recommended, because its dull red color is against its sale, as in the case of the "Philadelphia"; but it is possible that in time its quality may become known and the berry become in demand in the market. In Michigan the growers gather the fruit for market before it is quite ripe, and while of a bright red color, in which stage it carries and sells better than if left until fully ripe. Indeed one writer in the *Prairie Farmer* claims to have sold the Shaffer in Peoria at two cents a quart more than Cuthberts.

For evaporating, the Shaffer is especially valuable; it loses little more in weight than other kinds, yielding an average of at least eight pounds to the bushel, and sells at a higher price per pound than either Ohio or Gregg.

THE SUMMER MEETING.

THE meeting at Seaforth was highly interesting, and was chiefly devoted to a discussion upon small fruits, of which many fine specimens were exhibited on the fruit table. Of currants, the Red Cherry and the Fays' Prolific were spoken of with the most favor, the latter, however, as having better bunches and being more productive, especially when young. Samples of the Conn gooseberry were exhibited by the Secretary and by Mr. P. E. Bucke, which were large and fine, approaching the Whitesmith in size. We can bear testimony to the large size and great productive qualities of this variety, and if it is truly mildew proof, it will be of great value no doubt. Mr. Bucke has made a change in the name of this gooseberry, which is henceforth to be known as the "Autocrat." Mr. Beall, of Lindsay, said he believed it was an old variety, and if so the old name should be hunted out and applied, as it is confusing to have synonymous terms for the same variety of fruit.

The subject of "Judging Fruit at Fairs" was introduced by Mr. Beall, in a very able paper. The incompetency of many judges on fruit was severely criticised, and the great need of a carefully prepared scale of points for the guidance of the judges was strongly emphasized. It was also argued

that the one judge system was much more satisfactory than to have three as at present in most cases, because then the responsibility would rest with the one, and could not be shifted upon his colleagues. For this work really competent men should be secured and properly remunerated. Score cards should be used, upon which the judge should give the values under each point which had guided him in the awarding the prizes. A committee, consisting of the President and Mr. Beall, was appointed to prepare a scale of points to be brought up for the approval of the Association at the next meeting. This committee has in consideration some such list of points as the following, viz.:—(1) Commercial value, (2) Productiveness, (3) Hardiness, (4) Quality, and (5) Perfection of growth. The latter point would score more points than the others, because it includes color, size, freedom from spots, etc.

A very practical address was given by Mr. A. McD. Allan, the President, on "Culling, Grading and Packing of Apples for the British Market." He believed that the present system of buying apples in lots at one price, without regard to the real value of the various kinds, was very detrimental to the ultimate prosperity of Canadian farmers. In this way, people would plant those kinds which yield the most fruit, without regard to their value in the foreign markets, a course which would ultimately be found to be a most serious blunder. On the other hand, by paying prices according to the real value, planters would be led to buy only those varieties which were most wanted. For an example of his meaning, Mr. Allan gave the following scale of prices which should be paid for the staple kinds of apples, in a season when the Baldwin was worth $1.00 per barrel, viz:—Ribston Pippin and Blenheim Pippin, $1.50; King, $1.50; Spy, $1.30; American Golden Russet, $1.25; Greening, $1.00.

A committee was also appointed to prepare a complete fruit list for the Province of Ontario, showing the absolute value of each known variety, upon a scale to correspond with that upon which judges at fairs ought to base their awards; and also to prepare a list of a limited number of varieties for each county or agricultural division in Ontario, of such kinds as were proved by actual testing to be best adapted to each district. This committee will also report at the next meeting, and it is obvious that the result of such work, if carefully done, will be greatly to the interest of our Province.

Another very important plan of usefulness is being matured, and that is one for engaging in the work of the farmers' institutes. Our object is to encourage farmers to grow such varieties of fruits as will succeed in their respective sections, both for home use and for market. The great wheat fields of this continent are situated in the limitless North-West of our young Dominion. It is claimed that there are 250,000,000 acres of wheat land in the North-West, south of the 54th parallel; and north of that, along the McKenzie river, that there are 500,000,000 acres of arable, habitable land! What

chance then has Ontario, in the near future, to compete with such a country in grain growing? But in all that vast country very little fruit can be grown, and to us in Ontario will fall the opportunity of supplying it with those fruits which grow in such perfection with us. The importance of our work, therefore, can scarcely be over-estimated.

The Ontario Government has made arrangements for sending out our best and most practical fruit-growers to speak at Farmers' Institutes upon such subjects connected with fruit culture or forestry, as may seem to be most desirable at each place of meeting.

In view of the Dominion Convention of Fruit Growers which is to be held next January in either Ottawa or Montreal, under the patronage of the Dominion Government, it has been decided to hold the next annual and winter meeting of our Association in the month of December next; and, in response to an invitation from the North Essex Farmers' Institute, it has been decided to hold it in the city of Windsor.

THE HEART AND BIGGARREAU CHERRIES.

THE cherry crop at Maplehurst Fruit Farm has been unusually good, although requiring early harvesting to save it from loss by rot. Out of some twenty varieties, now about twenty-five years planted, only a few have proved themselves really valuable for market, and a limited number will give a successive supply of this most delicious fruit throughout the months of June and July. From the

HEART CHERRIES

we get as a rule less fruit than from the Biggarreau class, and on account of their tender skin they are more subject to being eaten up by birds; yet they are so delicious and so much sought after, that they bring the very top prices in the market and deserve a place in every garden in southern Ontario. The following list will supply the table with a succession of daily supplies until the Biggarreaus ripen, and with the Dukes and Morellos continue the cherry season for a period of about four weeks. The Early Purple, though of medium size, has no competitor in the market, ripening as it does about the first of June. Governor Wood is a delicious cherry for eating out of hand, and is fairly productive; the skin is a pale yellow half covered with red. It is closely succeeded by the Elton which we class as the best of the white heart cherries. The tree is a fine grower, and very productive. No cherry is more desirable for home uses; but for shipping it is somewhat tender. Of the black hearts we commend Knight's Early, Black Tartarian and Black Eagle. These are three varieties of the most excellent qualities, tender, rich, sweet and juicy. The latter, however, is not very productive, and would not pay to grow for market. The Black Tar-

tarian is the most popular of them all, but the birds know this so well that they usually get the largest share of them.

The

BIGGARREAU CHERRIES

are of firmer flesh than the preceding class, yet, owing to their great productiveness and large size, they are usually more profitable. Among the light colored ones, the Yellow Spanish is particularly worthy of notice. It is a beautiful pale-yellow cherry of enormous size and excellent quality, and though not a heavy bearer, yet, if sound, it would be very profitable to grow for market in southern Ontario; unfortunately, it is among the very worst to spoil upon the trees, even before it is ripe enough to gather. This season it has been particularly unpopular in the market on account of the rotten specks; indeed this fault has been found with almost all light colored cherries, dealers writing, "Send no more white cherries."

The Napoleon is the heaviest cropper of any variety we have tried, and though inferior to the former in quality, it is far more profitable, for it is almost as large, and is much in demand for canning purposes. Of the dark Biggarreaus, we have found two which excel any other cherries for profit, viz.: the Mezel or Great Biggarreau and the Tradescant's Black. The former is an enormous cherry, that has yielded with the writer as many as a dozen 12-quart baskets to a single tree, and that, of such cherries as sell in Toronto market at $1.50 per basket. The latter comes in with the Kentish, at a time when the market is clear of all the finer varieties. It is a fine shipper, because the flesh is so firm, and, like all the blacks, it has the advantage of color in concealing the specks of rot, which so disfigure the white ones, even when too small to really injure the fruit.

We have been troubled badly with the black knot on our Kentish cherries, but thus far we have kept them free by careful clipping off of all affected limbs.

If we could contend successfully with

THE ROT,

the growing of the Heart and Biggarreau cherries in favorable sec-

FIG. 56.

tions would be more remunerative than that of strawberries. Thus far, however, no very certain remedy has been proposed. Scientists very wisely tell us that it is a fungus known as *Oidium fructigenum*, which is very widely distributed especially upon the cherry and the plum. It consists of much branched threads which permeate the tissue of the fruit and cause it to turn brown and decay; and when

the air is moist these produce tufts of dirty white, dusty fruiting threads. These are divided into sections, which, when ripe, separate and form spores. When the fungus is ripe these successively ripen and drop away. We reproduce from the report of the Geneva Experimental Station, in fig. 56, a representation of two fruiting threads of this fungus, before the spores have begun to fall away, magnified 250 diameters.

As these spores can only develop in a moist atmosphere, it is evident that if we could keep our cherries perfectly dry there would be no rot; but as this is impossible, we can only employ preventive measures. They have great vitality, and preserve their generative powers from one fruiting season to another. Sometimes a fruit is attacked before it is ripe, and in that case it hangs upon the tree all winter, until the next fruiting season, and the spores are to be found on it during the whole time. Fallen cherries also serve to propagate the fungus from year to year, and therefore it is evident that much can be done by carefully clearing up and burning all that is decayed, and, where possible, by having pigs under the trees to eat up all that drops.

NOTES SUGGESTED BY JULY NUMBER OF "CANADIAN HORTICULTURIST."

BY THOS. BEALL, LINDSAY.

THE reports on the prospects of the fruit crop in the July number, coming as they do from reliable correspondents from all sections of the Province, make it one of the most valuable numbers yet issued. This number should be studied by every fruit dealer in the country as well as by every horticulturist.

When will the idea be exploded that whereas certain fruits, trees, shrubs and plants are affected injuriously by exposure to the cold, and may with difficulty be grown in a certain latitude, therefore it is folly to attempt their growth at any point further northward? Many other factors besides latitude must be taken into accoun to determine how far north certain fruits, flowers, etc., may be grown. The frost of May 28th, 29th, which prevailed not only over the whole of this Province, but also over the States, both to the south and west of us, did much less injury in some of the more northern portions of Ontario than in the southern districts. At Ottawa the temperature was only about one degree below the freezing point. At Lindsay about three degrees. At Woodstock, six degrees, while more than six degrees below the freezing point was reported from several places in the neighborhood of Rochester, N. Y., and south of that city.

The injury and injustice done to

the more northern portions of this Province by creating and maintaining erroneous impressions as to the capabilities of its soil and climate is due principally to thoughtlessness on the part of our southern neighbors. In the July number, CANADIAN HORTICULTURIST, page 192, P. B. Mead, writing of the *Yucca Filamentosa*—a southern plant—says it can be "successfully grown in the latitude of New York, *and even further north* with a slight protection." A number of fine specimens are now in full bloom on my lawn where they have grown without protection. They were planted many years ago. Lindsay is about 260 miles north of the latitude of New York City.

The Siberian Pea tree so highly recommended on page 200 is not a beautiful object here during the summer months. It is perfectly hardy and has very beautiful foliage until the hot dry weather sets in, but not afterwards. When the thermometer shows the temperature to be above eighty degrees, the leaves quickly change their beautiful green color to a sickly, yellowish brown, and it remains an unsightly object on the lawn during the remainder of the season.—*July 15th, 1889.*

LETTERS FROM RUSSIA.—I

By JAROSLAV NIEMETZ, COUNCILLOR OF STATE, ODESSA. (*Original in French.*)

I. STONE ANTONOVKA.

ONE of the finest of Russian apples, the white (ordinary) Antonovka is well known in America, although it has there unfortunately lost its Russian name, and is cultivated there under other names. "Queen of the Steppes" is the name which has been given it by the celebrated Prof. Budd. In the provinces of southern Russia, where it keeps until October, it is not counted among the winter apples, and is replaced by an apple which they call here "Lipovoe" (Linden apple). The finest qualities of the Antonovka are developed only in northern Russia, and there is no reason to doubt that in America it will succeed best in the North. That apple has several varieties in Russia, of which the best is without doubt the "Antonovka longovia" (meadow) or "Ramennaia" (Ramen signifies stone), which is a veritable winter apple, not only in the South but also in the North. Having only some very insignificant distinguishing points, it is very difficult to identify the "Stone-Antonovka," and it is necessary to have long practise to be able to recognize the two trees, but the former grows more slowly, is less umbrageous, and the wood is so hard that it scarcely yields to a knife; in one word, this apple tree occupies among the others the place which the oak occupies among the forest trees. The great difference is in the fruit. That of the Stone Antonovka is not so long

in form as that of the Antonovka ordinary; it is of a brighter color, and has a red tint on the side turned to the sun. The wind is unable to cause it to drop, until it is ripe in September. The apple carries easily, keeps well until June without losing either its flavor or aroma; while the ordinary Antonovka loses its flavor and becomes mealy. All these qualities have made the Stone-Antonovka a very lucrative product, especially in the gardens situated at a distance, away from the great centres, and in the market it is more prized than other apples. It is not by any mistake that this variety supplants all the others in our gardens. Perhaps the "Stone-Antonovka" is already known in America under some English name, if it is not I would advise the Canadian horticulturists to introduce into Canada that variety, which for its excellent flavor and ease of transportation, may become an article of export and as popular as the "Duchess."

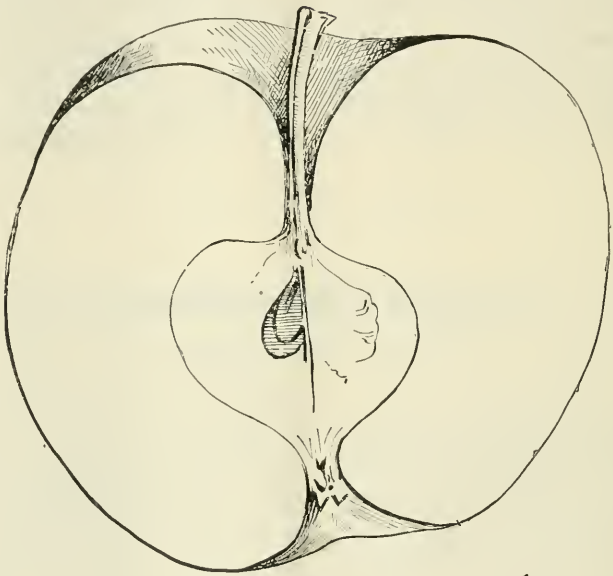

Fig. 57.—Stone-Antonovka.

II. KOSLOV PROLIFIC BUSH MORELLO.

The best Morello cherries suffer much from the cold in the gardens of Northern and Central Russia, indeed it sometimes happens that they freeze to the root, consequently the growth of the delicate varieties of cherries in the commercial gardens is impossible. It is with great pleasure that horticulturists have learned that an amateur gardener, T. W. Mitshourine, raises in the village of Koslov (province of Tamboff) two varieties, which are named in honor of the originator, "T. W. Mitshourine's prolific bush Morello," and "T. W. Mitshourine's Morello with small leaf." It is the former, which is the better, that I wish to make known to the

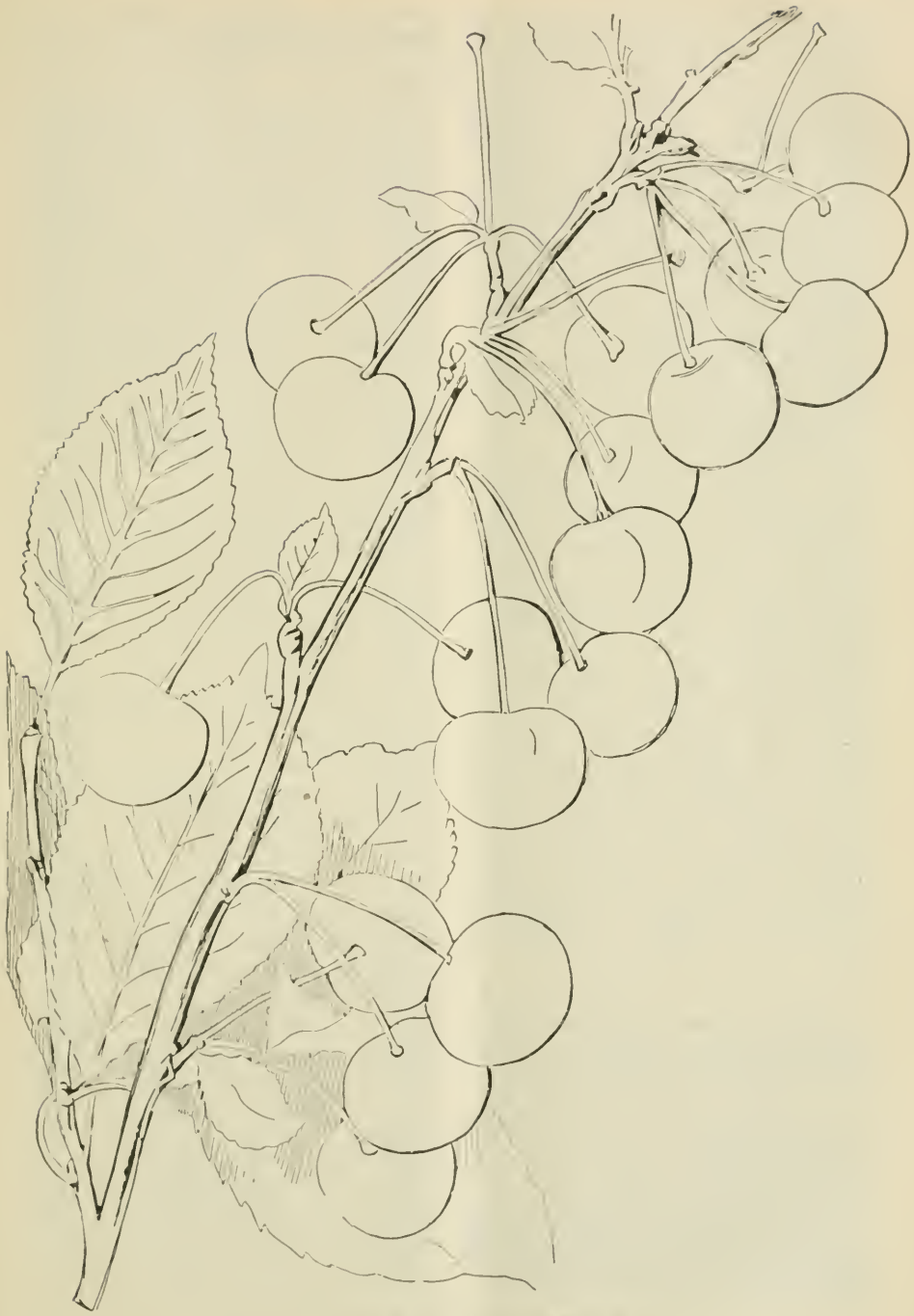

FIG. 58.—THE KOSLOV BUSH MORELLO.*

*This engraving is reduced nearly one-quarter.

readers of the "CANADIAN HORTICULTURIST," and I propose to name it, "Koslov bush Morello." See fig. 58.

The mother trees, which are in the gardens of the cultivator, are fifteen years old, have a height of one metre* and a half, the diameter of the very large head is two and a half metres, the trunk is three and a half inch. That tree flowers very late and gives without rest, each year, from twenty to thirty-five kilogrammes† of fruit, which ripen about the end of August, a time when there are very few cherries in the market, which is an advantage from a commercial point of view. The fruit is large, the surface is polished and of a brilliant color, the flavor is an agreeable acid, the flesh is juicy and the pit small. The originator does not grow this cherry by grafting, but from the pits, because, in grafting, this cherry loses in quality. The plants grown from pits do not vary, and after three or four times transplanting, bear fruit at the age of four or five years. The tree delights in shady places and is not affected by the cold, having already endured 35 Rea.‡ (46 Fahr.) without any injury. I beg you to pay attention to this early fruit.

III.

There are some varieties of pears which can endure the rigorous climate of the north, of which I may mention the following: Bessemianka Tonkovieska, Volga-Bergamotte, and some others. They are of no great value, but they are cultivated because the better pears are tender. Lately, attention has been called to some varieties of pears from Lithuania little known here, viz: "Beurre Slutsk" and "Bon Chretien Sobiesky." These are dessert fruits and not yet tested with respect to hardiness. Two pomologists, so far as I know, are occupied in the acclimatisation of some varieties of table pears, imported from foreign countries, viz: our renowned connoisseur of Russian fruits, Mr. A. Grell, of Moscow, and Mr. Mithourine, in the Province of Tambow; and their experience appears to me exceedingly instructive. I think it very suitable to quote a passage from one of Mr. Mithourine's letters. Here is what he says about the past winter and the hardiness of pears: "The past winter at Koslov has been unusually severe; it began without snow and found the trees still in foliage. The first cold was about 15 degrees Rea., and in the month of February it touched 32 Rea.; and as a result all the pears have been frozen. The following kinds have endured this severity without any special protection, viz.: *Foreign varieties:* Princess Royale, Beurre gris d'Été, Beurre Six, Champagne longue, Souvenir de congrés. *Russian varieties:* Beurre blanc de Livonie, Beurre verte de Livonie, Kvoschtchinskaia, Bergamotte rouge, Medviedievka. It is astonishing that any of the Bessemianka should have survived."

* A metre is 39.368 American inches.—ED. HORTICULTURIST.

† A kilogramme is about 2⅛ pounds avoirdupois.—ED. HORTICULTURIST.

‡ Reaumur's scale of grading the temperature is chiefly confined to Russia; in it the freezing point of water is made 0°, and the boiling point 80°.—ED. HORTICULTURIST.

CANADIAN APPLES IN BRITAIN.

From a Subscriber in England.

I READ in the Canadian Horticulturist that the Canadian crop of apples last year was unusually large, and the unusually heavy shipments from Canada and the United States wholly overstocked our markets, and brought down prices below paying prices. Now I believe that Britain has a stomach for *all the apples you can send* provided good ones and well packed only are sent. It should be obvious that none other can pay. You must incur the expense of $1 or so to place a barrel of apples here, good or bad. While the good may sell for from 15 to 20s. and some 25s., and the inferior kinds only 10s. and downwards. If Canadian shippers do their part by packing honestly and sending only good fruit, it will be sure to command sale at remunerative prices. The means must be taken, however, to make it known throughout the length and breadth and corners of Britain, that Canadian apples are to be had, and *how* they are to be obtained. Local dealers will spring up everywhere to order them from such important depots as London, Liverpool and Glasgow. *No such means are now taken*, which you will readily believe when I tell you *why* I say so. Here am I, a Canadian nominally, a Canadian fruit grower and constant reader of the Canadian Horticulturist, so that I am fairly posted up as to what is going on in the Canadian apple trade. I am living in one of the suburbs of London, within five miles of the Bank of England. I get my London daily paper at my breakfast table every morning, and I see no end of magazines, periodicals, etc., which are now made available for the circulation of advertisements of every conceivable thing that the makers or vendors desire to bring under public notice, and yet I do not know and cannot easily learn where or how to put my hands on a barrel of Canadian apples. I get a portion of my supplies of household necessaries from one of the many co-operative supply associations in London, from which I have for years had American, that is, United States, apples. Enquiring of them, they tell me that they keep only Greenings and Baldwins, which they know and their customers like. Their prices for these are 22 and 20s. per barrel. *They know nothing about Canadian apples*, and as to apples being more plentiful than usual, they were quite unaware of it, and could not purchase their supplies any lower than usual. London has so vast a population, equal as you know to that of all Scotland or Ireland, that it ought to be your chief market. Of all your shipments to Britain this year, the proportion that has gone to London must be but a flea-bite compared with the consumption, and could not affect the market prices at all. I see that the largest proportion of your apples goes to Glasgow. Probably the freights are lower than to Liverpool and London, and these I know have been affected by the liberal supply. Friends in remote parts

of Scotland, say at Campbelltown, Argyleshire, tell us they are getting good apples from Glasgow at little more than half the London prices. I can easily understand how heavy arrivals must bring down prices at Liverpool and Glasgow, where the local markets are limited until a proper system of trade is established by which outlets to all parts of the country are provided.

The course of time will ultimately regulate this, but in the meantime your shippers are suffering serious loss of their legitimate profits. If your fruit growers want to put their trade on a proper and satisfactory footing, they must take the matter into their own hands. They should have an intelligent, active and efficient general agent at London and make it their headquarters. If they cannot find in London such a man with local knowledge, they should engage a man in Canada, make it worth his while and place him there. If this be considered too costly, I venture to say that the losses of shippers, for want of such an agent, *is more so*, but it does not follow that the apple trade alone need have to bear the whole cost. Thebusiness of the apple crop would be confined to limited seasons, leaving a large portion of time available for other business that might be associated with it.

The suggestion is enough. If it commends itself to your fruit growers they will doubtless work out details for themselves.—H. F.

THE SIMON PLUM.

Dear Sir,—In looking at the colored plate of Simon's Plum in your last issue and noticing the statement on the opposite page regarding its quality, etc., I feel it a duty to say that this illustration shows the fruit about twice the diameter of the actual specimens as I have seen them, or fully four times its actual weight. These exaggerations are not only damaging to the papers publishing them, but a great wrong to those who may be induced thereby to plant. The quality of all the specimens that I have seen, of this variety, has been remarkably poor, even when compared with our cultivated varieties of American plums. Yours sincerely, H. E. Van Deman, *Pomologist, Washington, D.C.*

Note by Editor.—We thank Mr. Van Deman, who is the chief of the U.S. Dept. of Pomology, for this criticism concerning the plate of Simon's Plum. Our trees have not yet fruited and therefore we accepted the painting upon the testimony of others. It is only fair, however, to ourselves and to Mr. Smith, to say that the sample submitted to us by the lithographic company, and upon which our editorial was written, was quite different from the one finally furnished our printers by them, and probably much more correct, but it was too late to have them exchanged.

Our journal is conducted wholly in the interest of Canadian fruit growers of whom the editor is one of the largest, and it is therefore our aim, as well as interest, to avoid all misrepresentations and to have all frauds faithfully exposed.

STRAWBERRIES.—THE THREE BEST FOR HOME USE AND THE THREE BEST FOR MARKET.

By John Little, Granton, Ont.

IT is a very difficult matter to prepare a paper of this kind for a society that covers so large a territory as the Fruit Gowers' Association of Ontario, having in consideration so great a diversity of soil and climate. I shall be understood as referring only to the county of Middlesex.

Man, with all his knowledge and skill, can never make a strawberry, nor invent a machine to make one. He must have plants to do the work and the soil to afford a place for the plants, and furnish material from which they may draw their supply of plant food.

The plants should have within their reach, and in an available form, as much plant food as they can use. Large crops are never produced without a large supply of manure or its equivalent in unleached hardwood ashes, not less than forty bushels to the acre or more.

A new strawberry possesses great attraction. We all desire to know how large and productive it will prove to be. It will draw a larger crowd of admiring friends around the market-stand than any other fruit ever raised.

There are many farmers in the berry business all over the country who ought to go out of it simply because they will not do the business rightly. They produce quantity at the expense of quality. These men are not making any money in the business and there are many of them making much less from their farm crop because of the neglect arising from the cultivation of berries.

I am of the opinion that these large planters, by shipping so many small soft berries in bad condition, have glutted the market and almost ruined the business. I have seen this class of goods a drug in the market at from three to four cents per basket, called a quart; but on the same day good berries sold at from eight to ten cents per quart!

The bulk of the surrounding crop of small fruit is sold and consumed within ten or fifteen miles of where it is picked, yet, with these advantages, none of us are getting rich out of the business. Some are only making a living; while others are losing money and becoming discouraged with the low prices which have ruled the past few years.

In reading the horticultural press, I notice a great deal said about the man that grows from 5,000 to 10,000 quarts of strawberries to the acre and sells them at fifteen and twenty cents per quart, while nothing is said about the man that gets from 1,000 to 2,000 quarts per acre and sells them at four to five cents per quart. Less acres and more and better cultivation might remedy some of the evils.

Just here I might give you the testimony of several who are well known and experienced in fruit

culture, what each consider the best strawberry at the yearly meeting in Michigan :—

B. M. Hance—"The *Charles Downing* is the best."

F. R. Harding—"The *Wilson* is the best."

U. B. Webster—"The *Crescent* is the best."

E. H. Scott—"The Mount Vernon is the best.'

Mr. Cook—"The Triumph is the best."

Thos. Wild—"The Alpha is the best."

W. A. Brown—"The *Crescent* is one of the worst for eating or market."

T. T. Lyon—"I consider the Crescent one of the best early sorts for growing."

W. A. Smith—"The Wilson and the Sharpless are the best for quality and profit."

S. G. Antisdale—"*Wilson.*"

C. W. Garfield—"*Cowing* is the best quality for me."

C. A. Green—"For market—*Jessie, Bubach & Crescent.* For the home garden, *Jessie, Bubach, Wilson,* or *Jas. Vick.*"

Matthew Crawford—"For market—*Bubach, Mount Vernon, Cornelia.* For home use—*Mayking, Jessie, Cornelia.*"

Just the old saying, Many men of many minds.

The strawberries for home use to lengthen the season, should be early, medium and late, and in this locality I find Jessie for early, Bubachs No. 5 for medium and Gandy's Prize or Eureka for late, are the best. These are all large to very large, and are also satisfactory for market, being of the largest size and very productive.

A first-class strawberry should not contain over fifty berries to the quart. The time has been when it would be hard to find berries of that kind, but now there are many reports of instances of *thirty, twenty, sixteen, and the last surprise is one of eight berries filling a quart basket,* grown by a man of the name of *Shaw.* The story is vouched for by reliable men, as recorded in the *Ohio Farmer* of June 29th, 1889.

The second requisite is a very dark color and free from white tips. Some of the older varieties had this objection, such as the "Sharpless."

Thirdly, size and color must be accompanied by good quality such as Jessie and Jewell possess.

Another season's fruiting and testing of seedling and new varieties has passed. Some of them have been very satisfactory, although the severe frost of the 22nd and 28th of May injured all more or less.

Loudon's seedlings, the originator of the Jessie, are worthy of special mention ; large, beautiful in color and productive, his No. 15, 11, 21, 22, 33 and 60 are of the very largest size of fair quality and productive. I am of the opinion when they are offered for sale they will replace many now in cultivation.

Townsend's "Eureka" still maintains its popularity here as a market and home berry. We are having very fair pickings from it yet, when the old varieties are done. I am favorably impressed with the Haverland and Gandy.

LOCATION OF THE ORCHARD—ADVANTAGE OF A CERTAIN ELEVATION IN SECURING IMMUNITY FROM FROST.

SIR,—I was much interested in your editorial and accompanying reports concerning the frost in May last, as you can easily imagine when I tell you I have an orchard of twenty acres and that it had perfect

immunity from the evil effects of frost in that trying time. I purchased the property some thirteen years ago for orchard purposes and have never suffered from frost except once some seven or eight years ago when the fruit buds were brought far enough forward in February to be destroyed in March. I was like yourself when I read "Old Probs'" prognosis for May 20th, and felt, "others may suffer but I am safe." The result has justified my confidence, as has happened frequently before, when my immediate neighbors have suffered severely. This freedom of my orchard from frost is so remarkable that when I have mentioned the facts the statements are generally received with a smile of incredulity. I have in a manner been compelled to devote some thought to its cause, and think that possibly my views may be of assistance to others in selecting land for growing fruit upon.

The land in question is about two miles from the south side of Georgian Bay, which is 30 miles wide at this point. It has an eastern exposure, being on the eastern slope of the Blue Mountains,* the lower end of the orchard being about 150 ft. above the level of the bay, but the ground falls rapidly from this point to an almost level plain, 100 feet below, while the two miles to the lake does not descend much over fifty feet. On this plain, within fifty rods of the orchard, ice as thick as a window glass frequently forms during the night without any frost upon the orchard. From the upper side of the orchard the mountain continues to rise for some five or six hundred feet. I have often seen heavy frost and snow upon the mountain above, and frost as above described, without snow, upon the plain below, and no frost upon the orchard—about this time the incredulous smile appears—but I am not claiming more for my orchard than for my neighbors' similarly situated. These statements are true and can be substantiated by credible witnesses, and the immunity from frost of my orchard can be demonstrated at the present moment, for within its bounds are several varieties of apples, pears, plums, cherries, gooseberries and grapes and E. Crawford Peaches, with red, white, and black raspberrries and currants, heavily laden with fruit going on to perfection. There must be some reason or reasons for such a state of affairs, and as I am too modest to claim a special interposition of Providence in my behalf I have earnestly sought for the law or laws of nature governing it.

The results of my cogitations, whether right or wrong, are these: The mountain gives the protection from prevailing winds which has been so frequently emphasized in the reports of our Association. The south side of a large body of water modifies favorably the temperature of the air passing over the orchard from the cold quarter of the compass. These conditions were known and taken into account when the land was purchased, but, aside from the quality of soil and efficient drainage, were the only ones considered. The

*This ridge is known in the Niagara District as the Niagara Escarpment.—Editor.

question of the proper elevation came in unexpectedly to aid in procuring immunity and, in my opinion, acts in this way: Cold air, being the heavier, sinks to the lowest levels, causing in this instance the frost upon the plain, leaving a warmer stratum of air above in which the orchard lies. The higher end of the orchard is between three and four hundred feet above the bay, which, in this northern region, appears to be high enough to bring into noticeable action the law of the lowering of the temperature as the elevation is increased. Were it not for this fact in physics all the air above the lowest stratum would be of the same temperature, or an increasing temperature, as the mountain was ascended. The deposit of moisture on the higher levels in the form of snow, and not on the lower, is in consonance with this. The air on the higher levels from which snow is deposited is the warm moist air from the bay which has reached an elevation high enough to cool it to the point of congelation, while the cold air on the lower level is the dry air that was on the mountain and its slopes, which, as it was cooled near the surface of the ground, slipped down to the lower level of the plain, the place it had occupied being taken up by the warm air off the bay.

The fact remains of a remarkable immunity from frost of a strip of land on the slope of the mountain in this neighborhood, and has been noticed by you in your neighborhood. If my explanations are correct, anyone seeking land has new data to assist him in protecting his future orchard from the evil effects of frost, for as far as I am aware the question of the proper elevation to secure this object has never been looked at from a scientific standpoint before. I trust you will not find this attempt to obtain future benefit from present misfortune too long and garrulous for insertion in your next issue.—Geo. M. Aylesworth, *Collingwood.*

CARE OF VINES AND SUMMER PRUNING.

If all the rotten grapes of last season lying on the ground are covered so deeply at the first plowing that the after cultivation will not reach them, the danger of rot will be greatly lessened.

There is great diversity in modes of summer pruning the vines, and in what many call by that name we see only Vandalism, that is, to permit a free growth until after midsummer, and then to go through the vineyard with a scythe or a corn-knife, cutting and slashing as if they were trimming a hedge.

What we, here in Missouri, consider the proper method, is to have vines so pruned as to have two, three, or four canes start pretty well down on the vine, from spurs headed back for that purpose. These we let grow without any disturbance except to pinch the ends of the shoots when they have reached the top of the trellis or stake. Then let them run into laterals as strong as they please.

And now for the fruiting branches, which we begin on as soon as there are two joints formed beyond the

outside branch. We pinch the point off, and if there are too many bunches, pinch back two or three eyes from the second bunch, taking the third bunch off. Two bunches are, as a rule, better than three or four.

It will be but a few weeks until the outside bud will have started out, and often both will make several joints of growth, from three to four inches; then pinch them again. This will form a canopy of leaves over the fruit, and will develop it better than if the cane had been left to grow without checking. There will be plenty of leaves to carry on the fruit and at the same time put more vigor and force into it. This being done, all the surplus vigor will go into the canes destined for the next year's fruiting.

If a man is growing fine grapes for sale let him try the thinning process on a few vines; that is, leaving only two bunches on each bearing branch, and if these should not be nice ones, let him take off but one (the best) and then see if these will not command more money than if the whole crop had been left on. It is a fact that few realize to what size some bunches will attain if properly thinned. If extra fine bunches are desired for exhibition, select the largest bunches when the berries are well formed, and, with a small pointed pair of scissors, carefully clip out every alternate berry. It will surprise those who have never tried this, and it will afford no little gratification.

I once exhibited a bunch of Concords that weighed over one pound, and which had berries an inch in diameter. The President of the society came to me and asked seriously whether it was really a Concord, and the committee thought that I was putting a joke upon them. This was nearly thirty years ago, when that famous grape was not so well known as now. This thinning has another great advantage in case we wish to bag them, as it takes so many less bags.—S. Millar, *in Orchard and Garden.*

Floricultural.

Propagation of Roses.

It is too late now to propagate hybrid roses by layering. This should be done in July, and the process is well known, namely, to bend the branch and pin it to a shallow trench in the soil or weight it down and pack the earth firmly on top of it. Before the branch is laid down, a cut should be made on the under side about an inch long and to the pith of the cane. Spring the tongue away from the cane somewhat, as in Fig. 59, and in the fall it will be found covered with small roots. The cane may then be cut off near the cut and between it and the main plant, and the cutting so rooted will depend upon its own roots for nourishment.

Cuttings, or slips of roses, mainly

Fig 59.

teas, and tender ever blooming sorts, may still be rooted. This is generally done

in sand. The cutting is made of well-ripened wood, and is to have three eyes. The lower eye is to go in the ground, and from it leaves must be cut with a sharp knife in such a way that it will not injure the bud. When it is plunged in the soil, the base of the second eye must come just to the surface of the sand (Fig. 60). The pot or box in which such cuttings are started may be half-filled with earth, and topped out with sand. During warm weather, no bottom heat is required. Cuttings of the hybrids may be made in the same way, but the 1st of August is the time usually chosen, as indeed it is for teas, though teas may still be propagated.

Fig. 60.

Too much sunshine is not desirable for cuttings under these conditions. When they are first placed in the ground or pots, the earth should be

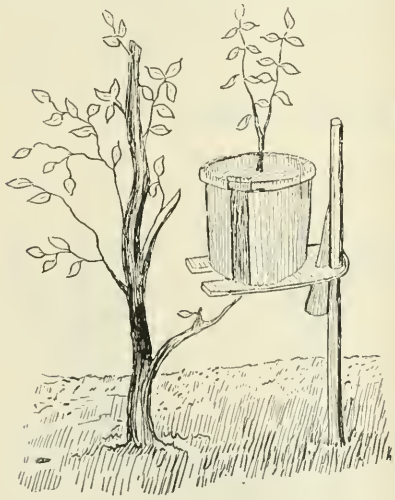

Fig. 61.

firmly compacted about them, but they should not be given a great deal of water. Protection of the soil from drying by mulch is preferable, as the slip cannot take moisture until it has started roots. It is often impossible to bend down stems of roses. A simple stand, as shown in Fig 61, is here useful. Some kind of a receptacle for earth, like a tin can of good size, should be provided. This must be opened at the side, first having the bottom melted off, and, after inclosing the branch it is desired to root, filled with damp earth and kept from drying. You will find the book entitled *Propagation of Plants*, published by the Orange Judd Co., 751 Broadway, New York, a very interesting and instructive work ; price $1.50.

Vines on the Old Trees.

In the rambling door yards of the farm houses of the land there is often to be seen a patriarchal apple tree, or a number of them, for, a century ago, our ancestors had to be utilitarians, and the apple trees not only furnished them with shade, but with fruit and flowers. But these old trees that have, for so many years, held aloft their yearly burden of fragrance and fruition are in the decaydence, and every season there are less of them ; it is, however, a pretty fashion when one breaks off, or has to be cut, to let it form its own monument, by leaving the stump, and, if possible, a small section of branch, and planting with some fresh earth a Clematis or Virginia Creeper at the foot, and placing a pretty bird house on top. Especially as it is not always convenient to have it dug out by the roots, and as it often leaves a space where one would prefer to have something growing.—*Vick's Magazine.*

Climbers in Autumn.

Climbing plants on walls require attention if not already attended to. They have completed their summer growth, and many of the shoots have extended considerably, and have not a particularly neat appearance. Some

persons adopt the ready method of reducing order out of confusion by cutting off all the summer shoots of their climbers close to the wall: but this a mistake. Some plants will endure it very well, but in the case of others it simply amounts to cutting off the flowers for next year; many shoots are removed on which flowers would be borne if the wood became hard and ripened by exposure to sun and air in autumn. Ripening of the growths is an important matter in the production of blossom. This may be seen with fruit trees, which after a hot summer are covered with "sheets of bloom" in the spring; but after a dull, wet summer, blossom is sparse. It is the same with plants of a woody nature, and climbing plants therefore should not be allowed to become so crowded with shoots now that they cannot ripen, or there will be few flowers next year. With plants grown for the sake of foliage alone the case is different, and they can be allowed to ramble and intertwine according to the taste of the cultivator.

THE VIRGINIA CREEPER.

This one (ampelopsis quinquefolia) is the easiest and quickest wall-covering plant in cultivation, and appears to grow as well in cities as in the open country, if it has fairly good soil to root in. Plants are also grown in boxes outside, and the growths arched over windows or trained as a green drapery to balconies. It is necessary to see that the chief stems of the plants are well secured to walls now, or the autumn rains add so much to their weight that the plants are liable to be dragged down to the ground. This occurs every year, and it is with the object of preventing such disasters that this reminder is given at a time when the hint may be of service. The plant referred to is known by many persons as the American vine. It is propagated by layers and cuttings.

AMPELOPSIS VEITCHI.

This is another species of the same genus, but the species referred to, Veitch's Ampelopsis, is a native of Japan, and is one of the most beautiful summer and autumn wall-covering plants in cultivation. The leaves are much smaller than those of the Virginia creeper, and the shoots cling to walls like ivy. In sunny positions, and where the soil is of a dry nature, the leaves assume brilliant tints in autumn. Many persons see and admire this glowing autumn wall plant at this season, but do not know its name, and are consequently unable to order young plants for themselves. This reference will enable them to identify what they admire, and procure plants if they desire to do so. Those who have them in a young state should secure the growths at first, directing them to the space they are expected to cover, after which they will require no further care. This attractive creeper is perfectly hardy, but casts its leaves in the winter. Beautiful specimens may be seen on the South church and high school buildings, as well as other places in Springfield. In Boston, where it was first planted to any extent, are some magificent vines.

HONEYSUCKLES.

The long streamers should now be affixed to walls where there is space for them, arranging them six inches apart, and those that cannot be secured may be cut to about a foot in length. This portion will then have a better chance of ripening or getting firm, and in winter the shortened shoot may be cut still more closely, or within an inch or two of the main branches from which it springs. The young shoots that are secured to the wall—that is, the growths of plants that have not occupied the space they are desird to cover, may be topped now, and pruned back to where the wood is firm, the soft portions being of no use for producing flowers.—*Farm and Home.*

The Canadian Horticulturist.

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Notes and Comments.

WRAGG AND VLADIMIR CHERRIES. —Mr. A. A. Wright of Renfrew, sends us samples of these cherries. In point of quality, if these are a fair sample, we are disappointed in both of them. As may be seen on p. 239, Mr. Wright most values the Wragg, but both are much inferior to the Kentish, having a somewhat bitter taste and tough skin. The Vladimir resembles the Kentish in size and appearance, but the Wragg is much darker. Possibly they would be valuable in pies, and perhaps Mr. A. A. Wright, or his estimable wife, can give us some information on this point; but rather than eat them for dessert, even if we lived in the cold north, we would prefer to pay the express on a basket of fine Canadian cherries from Toronto.

THE CRANDALL.—We are just in receipt of a quart of sample berries of this new currant, and also of a limb with fruit attached. They are in size very large, much larger than the largest size of Lee's Prolific. The ripe ones are jet black, and altogether seem to be a fruit that would sell at a very top price in the market for black currants. We like the flavor both raw and cooked. We have had a few made into jam, and all pronounce it much ahead of the ordinary black currant jam. The only fault we can discover is the *toughness of the skin*, which is not made very tender even by cooking. Possibly this may be in its favor as a shipping fruit, because it would carry well.

KEROSENE EMULSION. — Prof. Riley's formula for making a kerosene emulsion is as follows :—Gradually add to kerosene half as much milk, stirring thoroughly the two until they are perfectly combined and no drops of oil are to be seen, and a complete emulsion is formed. For use one part of this emulsion or mixture is added to twelve parts of water, and thoroughly stirred. This he says is a most generally useful insecticide.

POTTED STRAWBERRY PLANTS.—Mr. W. F. Massey writes in the *Garden and Forest*, favoring the use of potted plants. His custom is to make the soil clean and mellow between the rows, and to train out the runners to strike root in this as soon as possible. He does not sink pots, but instead he takes up these young plants as soon as they have made roots half an inch long, and removes them to the potting shed of the greenhouse where he pots them com-

fortably in good soil. These he places in partial shade and keeps them well watered, and as a result he has better plants than those which are grown in full exposure. These plants are ready for setting in the end of August, and will become sufficiently established to bear a fair crop the following year, and a full crop the year after. This is as long as he would keep his bed, for he finds it less trouble to plant a fresh than to keep an old bed clean after its second crop.

The Fruit Prospects do not improve.—There is a great outcry in the Grimsby section that the grapes are dropping from the stems, and that this misfortune is so serious that in some cases almost the whole crop is already lost. One gentleman who has a vineyard of Niagaras, a kind which appears to be suffering more than any other, says that a few weeks ago, had any one offered him $700 for his crop he would have scorned it; now, he says, his whole crop will not be worth five cents. Even the Concord is suffering very much in some vineyards. We can give no satisfactory explanation, unless it is the excessive rains which occurred at blossoming time.

The apple scab has returned with more destructiveness than ever, especially upon the Early Harvest and the snow. Many of the young apples are literally covered with the fusicladium, and are cracked from stem to calyx. Greenings and Kings are also much affected.

Popular Gardening publishes a report of the respective fruit crop in the United States in a chart in which 5 indicates a very heavy crop, 4 above the average, 3 the average, 2 under, 1 poor, and 0 a total failure. As a result it is computed that all fruits will be under the average except Raspberries, Blackberries and Strawberries, and these are very little more than an average.

Thinning Fruit.—This is a practise more often neglected than observed. Most of us acknowledge the utility of it, but we have yet failed to meet with the Canadian orchardist who regularly thins his fruit. No doubt it can be proved that it pays in dollars and cents, for, when a tree or vine is overloaded with fruit, much of it will be too small to gather, and the whole will sell at a low price. As for the extra labor, this is not to be considered, for if a tree has on it two hundred peaches what difference is there whether we gather one hundred now and one hundred in October, or the two hundred in the latter month?

Many of our apples and pear trees, too, are cumbered with a large amount of defective fruit, which is robbing them of their vitality in the maturity of the seeds. These should by all means be removed as early as possible, in order that the strength thus being wasted may go to the enlargement of the finer specimens. There is no doubt it will pay well to thin our fruit, and we would like to hear from any one who has given it a fair trial.

The Pear Blight and the apple twig blight are both playing havoc with many beautiful trees this year. Mr. E. J. Woolverton has a beautiful orchard of fine thrifty Duchess dwarf pear trees; they are of bearing size and were the pride of the owner until early in June, when alas! this terror of the pear grower, visited that orchard, and now it is a sad spectacle; whole rows of trees with scorched bark and withered leaves, tell the ruinous tale of destruction. The Quince is also suffering very much, though as with the apple, it is chiefly the smaller twigs that suffer.

Prof. Burrill, of Champaign, Ill., says the mystery of the blight is now explained. It is caused, he says, by tiny organisms known as bacteria, which are so very small that they can only be seen with the high powers of a compound microscope. To the same group belong most of the so-called disease germs to which are

now attributed many of the deadly diseases which affect man and animals. In this we believe no one has as yet contradicted him, and indeed, when it is so hard to study the habits of the visible creation, few of us will attempt to disprove the statements of the careful scientist with regard to microscopic life. The germ of the pear blight is described as egg-shaped and consisting of a single cell which multiplies by division across its middle. It has no mouth, stomach, leaves or roots and can only take in nourishment by absorbtion. The only way in which it can gain entrance to the cells of the pear tree is through wounds or through such young and tender parts as are not yet protected by a skin-like covering, *e.g.*, through the tips of growing twigs. Once there, it absorbs for its own development the materials stored up in the cells for the tree, and increases with such rapidity that there are soon millions of them in a single twig.

The only remedy proposed is careful cutting away of the affected parts. The extent of the injury can usually be seen by close examination and when the lowest limit is found, the whole of the part should be cut away, and the wound painted with raw linseed oil and lead to exclude re-entrance.

Comparative Apple Shipments.

THE following table of apple exports from years 1880 to 1889, may be interesting to Canadian apple growers. From this we learn that last year was the heaviest exportation ever made of apples from the American continent; and if we could read behind the scenes, no doubt we would also learn that it was on the whole the most disastrous to shippers. We notice that New York is the largest port of export, and Montreal and Portland next. We class them together, because Portland only takes the place of Montreal when that is closed by the winter.

The table is prepared by R. Dixon, of New York City.

—	PORTS OF EXPORT.						PORTS OF IMPORT.					
	New York.	Boston.	Montreal.	Portland.	Halifax.	Phila.	Annapolis.	Liverpool.	London.	Glasgow.	Various.	TOTAL.
1880-81.....	599,200	510,300	145,276	39,908	24,259	9,872	.....	839,444	177,935	216,391	95,036	1,328,806
1881-82.....	75,889	65,093	56,433	6,497	13,805	.....	21,535	133,784	46,147	59,266	55	239,252
1882-83.....	169,570	102,409	64,390	16,890	18,542	3,900	19,893	253,432	46,975	81,869	13,318	395,594
1883-84.....	53,948	7,145	9,811	3,758	325	.....	.....	46,661	4,843	29,695	343	81,532
1884-85.....	250,314	307,130	84,487	71,460	41,207	.....	8,612	491,898	123,081	137,641	16,590	769,210
1885-86.....	466,203	221,724	68,716	87,301	37,982	186	3,161	537,695	147,102	176,445	24,031	885,273
1886-87.....	175,595	303,479	106,713	100,596	94,606	.....	26,935	468,553	187,810	138,756	12,775	807,924
1887-88.....	275,696	163,916	93,058	25,215	32,652	.....	17,884	346,557	104,072	130,537	18,275	608,121
1888-89.....	474,337	382,199	291,307	145,825	94,691	860	18,190	790,502	279,374	272,068	65,495	1,407,109

Preservation of Grape Juice.

Mr. W. D. Kitchen treated the Ontario Fruit Growers Association to some grape juice at the banquet given us at Grimsby two years ago, and it was pronounced excellent. He has now in his cellar some 10,000 bottles which he has kept two years without the slightest fermentation. In view of this the following from *Vick's Monthly* is opportune :—

In the report of the Chemical Division of the Department of Agriculture, for 1887, occurs the following on the "Preservation of Wine": "The method *par excellence* for the preservation of wines is Pasteurization, already alluded to in this report on malt liquors. The temperature employed is from 50° to 65° C., and serves to completely destroy all vegetable life in the wine. When a process so unobjectionable in every way answers its purpose so admirably, it furnishes an additional argument in favor of the legal suppression of all chemical means of arresting fermentation by the use of antiseptics, etc."

The temperature mentioned above, of the Centigrade scale, corresponds very nearly to 125° to 150° Fahrenheit. Pasteurization, then, consists in heating the liquid to be preserved to the degree mentioned above, and then excluding the air from further contact with it. Grape juice can in this manner be kept perfectly without fermentation, or it can be allowed to pass to a certain stage of fermentation, developing a desired quantity of alcohol, and then being held at that point. The close bottling of such liquids is an essential condition, and then they must be used when opened, otherwise, with the access of air, the fermentive process commences.

The Powdery Mildew.
(*Uncinula Spiralis*)

Mr. Wm. Orr, of Stoney Creek, called at our office on the 27th inst. to say that a mildew had suddenly appeared at Stoney Creek and was working sad havoc with the vineyards, which had escaped the frost. We at once inspected our own and a neighboring vineyard and found it but too true, and remedies must be at once applied in order to save our crop.

One year ago we gave some account of the Downy Mildew, (or *Peronospora*), and as the treatment of the two is wholly different, flour of sulphur being a specific remedy for the one, and useless for the other, it is very important that all vinyardists should learn to distinguish them.

Without entering much upon the botanical, we may call attention to the external characters, by which the Powdery Mildew may be known. In the first place then it requires a comparatively dry atmosphere for its development, while the former requires a liberal supply of moisture ; for this reason it is a serious pest in California. Secondly, it appears in dull grayish-white patches upon the upper surface of the leaves, and sometimes thickly covers the berries themselves with the greyish powder ; while the Downy Mildew appears chiefly upon the lower sides of the leaves as white patches, and on the upper side only as yellowish spots which soon assume a brownish hue, and finally the leaf becomes dried and shrivelled. From these characters no doubt the observer can readily distinguish which mildew is upon his vines.

As the Powdery Mildew grows wholly upon the surface and does not penetrate its host as the Downy, it may be destroyed by the direct application of some fungicide, while the mycelium of the Downy Mildew so penetrates the leaves and fruit, that remedies for it must be preventative, and consist of copper solutions applied early in the season, before the fruit has formed.

The simplest and most effective remedy that has ever been discovered for the destruction of the Powdery Mildew, which is the one just now (June

27) so rapidly spreading through our vineyards, is the flour of sulphur. The fumes given at high temperature by this powder are destructive to the fungus; and therefore the best effect can be gained when the thermometer is the highest, as say from 75° to 95° F. Where the temperature of the soil is as high as 110° to 120° during the day it is found that it is sufficient to merely strew the sulphur upon the surface of the ground under the vines. It is stated also that where the temperature does not exceed 77° the effects of the sulphur will not be apparent until after a week's time.

QUESTION DRAWER

The Grape Vine Flea Beetle.

61. I SEND you a sample of the doings of an insect that I have found playing havoc with both grape vines and Virginia Creeper. It is something new to me, but, perhaps, some of the members of the F.G.A. may know it. I got it at Mrs. Wm. Ball's, Hullet, near Ball's Bridge. The grape vines were killed off with the frost and now the young shoots are being destroyed with this pest, and it is just as bad on the Virginia Creeper, leaves of both I enclose with the little worm. The moth you see was on the leaf just where I crushed it. I thought it might be interesting to the Society, I therefore took some specimens for you.—WALTER HICK, *Goderich.*

FIG. 62.—THE GRAPE VINE FLEA BEETLE.

The insect enclosed in the box, together with some well riddled grape vine leaves, is the Grape-vine Flea beetle, known to entomologists as *Graptodera Chalybea*. It is a near relative of the potato beetle, both belonging to the family *Chrysomelidæ* or leaf eaters. The moth enclosed has no connection with the larvæ which have so greedily stripped the vines of their foliage; the parent is a beetle, which is very destructive some seasons by boring into and feeding upon the young buds. It hibernates under loose patches of bark or other refuges from the cold, and after feeding upon the buds during the month of April, and the leaves in the month of May, it deposits upon the foliage clusters of orange colored eggs, which soon hatch out into the still more destructive larvæ, such as those which Mr. Hick has sent in to us.

In order that our readers may the easier distinguish this beetle and its progeny, we copy an engraving showing its various stages. The larvæ is shown in *fig. a*, hard at work skeletonizing a leaf, and at *b* highly magnified. When full grown, it is a little more than three-tenths of an inch in length, of a brown color with a black head. After feeding about a month it descends to the earth and encloses itself in a small roundish cell such as is shown at *c*, from which in about three weeks emerges the perfect beetle. The latter is described as about three-twentieths of an inch in length, and varying in color blue to green.

To destroy the beetles, Prof. Saunders recommends in his book on "Insects Injurious to Fruits," strewing air-slacked lime or unleached wood

ashes about the infested vines in the autumn; and, to destroy the larvæ, spraying the young foliage with Paris green and water.

Root Pruning.

62. WHAT is the correct time and mode of root pruning. I have two plum trees, a Lombard and Bradshaw, that make much wood but little or no fruit. One man says cut your trench at a distance of eighteen inches, another thirty-six inches. Again, there is a question as to season. The diameter of trunk is near six inches. Can you recommend me a first-class work suitable for Canadian Horticulture. I am in want of one for reference.—WM. R. HUGHES, *Toronto.*

Root-pruning is a practice which we would like to have come under discussion at a meeting of our Association. In our opinion it is an exploded notion that any particular good can come from such a barbarous custom. How can any one give directions for cutting off just the proper proportion of roots, when those roots are buried from sight, and the length depends upon so many conditions, such as prosperity of the soil, manner of cultivation, etc., etc. Such an operation would be something like pruning the branches of a tree in the dark, or like cutting off all limbs extending beyond a certain distance from the trunk. Of course root pruning will check the growth of a tree, and possibly as a result throw a too vigorous tree into bearing, but the same object can be gained by other means, such as less cultivation, summer pruning, etc., and with less permanent injury to the trees.

There is no Canadian work that we know of on Horticulture except "Beadle's Canadian Fruit, Flower and Kitchen Garden." Among American authorities we have "Downing's Fruits and Fruit Trees of America"; "Thomas' Fruit Culturist"; and "Barry's Fruit Garden."

Sample Gooseberries.

63 SIR,—I send you a few gooseberries for examination as I rather fancy their shape. I think the bush is a seedling, as it came up close to a post in the garden.—G. WILGRESS, *Cobourg.*

In shape this berry is obovate, but in size it is scarcely as large as Smith's Improved, and probably no better.

64. BY post I send some gooseberries. I grew the bush which bore them, from seed. It is grown on a heavy clay soil. The bush is about three years old, and very healthy and the leaves very green and firm. I should like to have your opinion on it. No mildew has appeared on it and no grub, but the latter may arise from the fact that it is not very near any other gooseberries or currants.—ALFRED HOSKIN, *Toronto.*

These samples are larger than the last, and would average larger than Smith's Improved. We can say little about them, however, without seeing more of them. Our friends should send us a branch of the bush with the berries attached, for sample. where convenient.

The Juneberry.

65. Could you kindly inform me, 1st., What varieties of the Amalanchier family are useful as small fruits; 2nd., Are they in cultivation; 3rd., Where can they be had to purchase; 4th., How are they propagated; 5th., What is their value for home use or market as compared with huckleberries and are they a profitable fruit to grow?—P. E. BUCKE, *Ottawa.*

We have had no experience in the cultivation of the Juneberry, and therefore can give no personal experience. A writer in *Vick's Magazine* says:—

"In the cold north, where the variety of iron-clad tree fruits is yet limited, any addition is acceptable. Arborescent forms of the Amelanchier are quite numerous in northern New England. I have received four very distinct kinds from Aroostook county, Maine, and here in Vermont the wild trees vary much in the size as well as abundance of their blossoms and their fruit. But west of the Mississippi there are found dwarf, large-fruited species which bloom and bear at two or three years from seed, and make compact bushes

not larger than the currant. The fruit of these vary, but on some they equal or exceed the size of the Cherry Currant, and are produced abundantly. This fruit is sweet and pleasant, less acid than the Blueberry or Huckleberry, and is an acceptable garden substitute therefor. It is, however, much more sought after by birds than either the Currant or the Huckleberry—in fact, they are disposed to take it all, considerably in advance of ripeness, and I fear this will prove a serious difficulty in the way of its successful culture. Still, it might pay to cover the bushes with cheap netting. Almost everybody likes the fruit, the native variety going here by the name of "sugar plum."

Mr. H. Vandeman, chief of the U.S. Department of Horticulture, says:—

"I have been experimenting with the dwarf varieties of Amelanchier for about fifteen years, and I have several varieties growing upon my place in Kansas which are abundant bearers, extremely hardy, and have never been troubled with any fungus. Have sold four to five hundred quarts of the fruit in a season, generally at good prices. The varieties differ greatly. I have one from the mountains of Pennsylvania which is of unusually fine flavor, and very promising."

They are propagated by layers, cuttings, or by grafting upon the Hawthorn or the Quince.

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66. MR. P. ALLAN, of London, writes asking about the variety being introduced under the name of "THE SUCCESS." We cannot reply better than by quoting from a letter from Mr. J. G. Lovett, Little Silver, N.J., the introducer, who is probably the only one who has tested it.

"SIR,—As to the Success Juneberry we would say that we consider it by far the best variety of the Juneberry that has yet been introduced. It is of a much finer flavor than other sorts; the fruit is of a dark purple when fully ripe; of the same shape but much larger than the common huckleberry; flavor sweet, or of a very mild subacid. It is becoming very popular, transplants easily and is quite hardy and stands the summer sun exceedingly well. Planted once, they continue for one's lifetime as they propagate from suckers that spring up from the base of the bushes. Although the Juneberry does not rank equal with some of our best small fruits, still it is certainly well worth a place in the family home garden, and the variety "Success" is the best yet introduced."

Pot-grown Strawberry Plants.

67. WHAT is the best time to plant pot-grown strawberry plants?—T. G. GASTON, *Hamilton.*

Reply by T. C. Robinson, Owen Sound.

The best time to plant potted strawberry plants is *just as soon as they are obtainable.* Runners start from vigorous old plants early in June. If these are "layered" on the surface of rich soil in small pots they will usually form well-rooted young plants in the pots early in July. Planted in July they will yield next season more than half as much fruit as a plantation, equally treated and of equal size, started in the previous April, although, if well treated, they will do a great deal better than many a "full grown" plantation of equal extent which may not have been hoed just as promptly or may not have been manured as plentifully as desirable.

The Dying Oak.

68. I TAKE the liberty of writing you to see if you or any of your readers can give me some information on a subject that interests me. I have a few large old oak trees on my place. They look healthy except a few limbs at the top. Every year a few more die off leaving the tops dry and ugly. The lower limbs of the trees keep healthy and grow considerably every year. The trees are so large and high I can't get anyone to go to the top to cut off the dead wood.

What is the cause of the death in the trees and what remedy would you suggest?—W. W. F., *London, Ont.*

Reply by T. M. Grover, Norwood, Ont.

This oak, of which it is said a few top limbs die yearly, is probably too large to be permanently preserved. The death of an additional part is perhaps due to the root being very long in some parts and reaching a soil unsuitable to nourish it. It has got to a stratum of rock, wet clay, or got exposed to some injury or change by drainage, excavation or mutilation. But there are plenty of men in London who will ascend that tree and cut out the dead limb; and fortunately the oak is one of the few trees that does not depend on the regularity of outlines for its beauty and, no matter how broken up, it may live grand and safe for generations.

The Gooseberry Fruit-worm.

(*Dakruma convolutella.*)

69. I send to-day specimen gooseberries containing worms referred to by you in June HORTICULTURIST. If you keep them a few days they will make a hole but will not leave the berries for some time longer. We have also experience with the large green worm which webs a number of berries together. Those inclosed are more destructive. I inclose a specimen of mildewed Industry.—W. ELLISON TAYLOR, *Beaverton, Ont.*

THE specimens sent us by Mr. Taylor contain the larva of the gooseberry fruit-worm. It is of a reddish-yellow tint, its body tapers a little toward each extremity and its head is small, brown and horny looking as described in Prof. Saunders' work on Injurious Insects, and one of its distinguishing characters is hanging down by a thread when disturbed. When full grown this worm transforms into a small brown crysalis, which lies hidden among the rubbish on the ground until about the end of April, when the moth comes forth and is prepared to deposit its eggs upon the young gooseberries as soon as they are formed.

The gathering of all the affected berries and destroying the larva they contain is about the only plan that has been advised. Dusting the bushes with air-slaked lime in spring time is also said to be useful by deterring the moth from depositing its eggs.

OPEN LETTERS

Crops in Stormont.

SIR,—The clerk of the weather has dealt so ill with us we have to own up, to having trusted too much to appearances, in our report last month. We predicted a fair crop of apples, and had blossom enough to feel sure of it, but apples are a complete failure with us, and the few we have are as badly spotted as ever. Surely a wholesome rebuke comes here to our grumblers who last year had it that apples were so plentiful they were not worth growing. They will miss their apple sauce this year, and we can hardly pity them. Strawberries were a failure with us. Last year we picked 1,000 baskets off quarter of an acre; this year it took one and three-quarter acres to make up the same amount. The few raspberries, currants and gooseberries we had, the birds devoured. We begin to see the pith of friend Dempsey's advice to us on this point—grow enough for the birds too—but their appetites are enormous, they open a market for us greater than our limited space can supply. They hay crop here is heavy, but to make hay when the sun shines may be good advice if you have the sunshine; this season we have to take it by starts, between showers, which fail us never. Constant rains have done us much damage.

Will you or any of your readers kindly tell us how to kill Poison Ivy. We have it growing around the roots of trees where plowing is unpracticable.—JOHN CROIL, *Aultsville, July, 1889.*

A New Strawberry.

SIR,—THIS berry originated in the garden of S. D. Birchard, in Township of Scott, about forty

miles north of Toronto, in 1881. First noticed the berry as a seedling, and were so favorably impressed that we picked the plants of that kind, and when we moved to Watford we brought a few with us and continued to increase them, and have tested them and found them perfectly hardy. All callers praise them and say they are nicer than others previously handed to them. They are preferred in the market to anything we have. It is preferable to Crescent in hardiness and flavor. The plant is a vigorous upright grower, and the dark, glossy green foliage covers the fruit well from the sun. It is a perfect blossom and a good fertilizer for Crescent. We use no other. Fruit is very firm, perfect in form, inclined to be wedge-shape sometimes; color, deep crimson, pretty much same to centre when fully ripe. It is of a pleasant rich flavor, and about size of Crescent. It is a good shipper, firmer than Crescent, and a favorite with consumers. It is a few days later than Crescent.—O. F. BIRCHARD, *Kingscourt, Ont.*

Big Berries.

SIR,—MR. W. S. TURNER, of the Cornwall Manufacturing Co., is probably the most successful amateur gardener in Cornwall, having the faculty of taking an enormous quantity of stuff off a limited space, which after all, is the measure of a gardener's ability. Mr. Turner has paid a good deal of attention to strawberries, and his crop this year is something out of the common. He favored us on Monday with a basket which was well filled with twenty berries, several of which measured over six inches in circumference. They are of the Jessie variety, which, with the Bubach, Mr. Turner considers the best variety he has struck yet. They are even larger than the Sharpless, and of a better shape, while the flavor is rich and luscious. We would advise anybody who has a strawberry patch to try Jessie. She's a daisy.

To the above I would call particular attention as also to another case I will cite giving evidence the most conclusive, that it is the thoroughly cultivated ground only, be the extent large or small, that pays.

Referring readers to Mr. Turner's excellent letter on Amateur Gardening, in the July number of the HORTICULTURIST, which I have read at the Farmers' Institute meeting at Cornwall, and feel safe in saying it was the best paper on Horticultural matters laid before the meeting, and none met with a more favorable reception. I think because it was short, but not too short to give all the information the writer meant to convey.

Read his letter again, friends, in it you'll find *multum in parvo*, and I think you will agree with me that I am giving Mr. Turner no more than his due.—JOHN CROIL, *Aultsville.*

Robson's Seedling Plum.

To the Secretary F. G. A., of Ontario:

DEAR SIR,—Knowing how deeply you are interested in any horticultural novelty, I trust you will pardon me for venturing to enlist your attention by describing a seedling plum which I have growing in my garden, and which by sheer accident I discovered it possessed the property of transforming itself into a soft, flexible and delicious prune perfectly cured, and will keep the year round without the least sign of becoming hard or dry.

The way I discovered it was by simply leaving this plum in a closet in my tool-house with many others, to make an assortment for our Fall show last year, and having more of this kind than was wanted the balance was left in a small wooden tray all the winter. On opening the closet this spring I was much surprized to find this plum in a perfect state of preservation, very inviting in appearance, and Mr. and Mrs. Thomas Beall pronounced it excellent in taste.

Some of my horticultural friends think it must be valuable, to dry without sun or fire heat.

I would have sent you a specimen, but, having only two left, and they being in a mutilated state by opening them, to show the pit and flesh to many parties. I should be much pleased to have your opinion (or that of any of your numerous subscribers) respecting this—to me and many others a novelty in Canadian plums.—Yours truly, W. M. ROBSON, *Lindsay.*

A Correction.

SIR,—A typographical error in my letter, in the July number of the HORTICULTURIST, respecting the Larue apple, causes the name of an old family in this section to appear as Snell. I should be Buell. The error is not of any great consequence, but as some of your readers might wish to communicate with the present owners of the property where the Larue apple originated, it is just as well to correct it.—J. J. BELL, *Brockville, July, 1889.*

Fruit Prospects at Orillia.

THE frost destroyed our grape blossoms, with early tomatoes and beans, but was just too late to hurt the apples, which are as yet quite too thick on the trees. There is a second crop of grape blossoms which cannot ripen. Wild plums are a full crop, which has not been for years. Plenty of gooseberries, tame and wild. Wild strawberries, irregular; garden ones, rather late. Pears numerous on the few bearing trees. A good season for newly planted trees and grafts.—J. CUPPAGE.

The Jessie.

SIR,—Of the three plants, Jessie Strawberry, I received from you in the spring of '88

only one is living. That one is a strong plant, vigorous grower, and has borne a very heavy crop of large berries.

The largest one measured five inches around one way and four inches and a half the other way. I did not measure the diameter. It was quite ripe all through and of excellent flavor. I think the Jessie is all that it is claimed to be.—Yours truly, THOMAS R. HUGHES, *Cote des Neiges, Montreal, Que., July 2, 1889.*

Turpentine for Black Knot.

SIR,—The black knot has made its appearance on two of my plum trees. As soon as I saw it I thought I would try the linseed oil, but I had none at the house ; but I got some spirits of turpentine that I had in the house. I thought I would cure the black knot or kill the tree. I applied the turpentine with a feather, and in ten days the black knot was killed, and the unaffected part of the tree not any the worse, only where I had dropped the turpentine on the leaves they turned yellow.

Hoping this will be of use to the fruit growers, I remain respectfully, LEVI BRILLINGER, *Collingwood, July 4th, 1889.*

Off to China.

SIR,—A line to say good-bye. I am off two days hence for Vancouver, Yokohama, Hongkong, Singapore, India, etc., so shall not be at the horticultural meeting at Ottawa next winter. I did try hard, having this in view, to have the meeting held in Montreal last winter.—Yours truly, C. GIBB, *Abbotsford, Que., July 5th, 1889.*

The Crandall.

SIR,—As to the productiveness of the Crandall, it this year beats all we have ever claimed for it by far. Can you not come and see it next week, in the interests of the Fruit Growers' Association of Ontario. We think it will well pay you to do so, and see for yourself that the Crandall is the most productive of all small fruits of any kind or name.—Very truly yours, FRANK FORD & SON, *Ravenna, O.*

Using Liquid Manure.

SIR,—I appreciate your publications very much, and have tried carefully many hints published therein, in the cultivation of grapes, strawberries and raspberries, these being the only fruits I have yet tried my fortune on. I have this year an abundant crop of strawberries and a fine prospect for raspberries. The strawberries average an extra size, many measuring four to five inches in circumference. The plants are exceedingly full and strong, on some of which the berries just hang in clusters of one dozen to two dozen each, and some plants have three to four clusters. I received the plants from Mr. Robinson, Owen Sound, two years ago. They were good plants, but I attribute my success to my persistent watering with liquid manure. This hint I saw in a Scotch paper last year, that to make a success of *strawberries*, *raspberries* and *roses* use liquid manure freely.—I am yours truly, J. D. HENDERSON, *Toronto, Ont.*

The Conn Gooseberry.

SIR,—Per to-day's mail I send you four King Conn gooseberries just picked to-day. I got six bushes from Mr. Conn at Kemptville, one year ago, and they had a few berries on last year and they made good growth, and this year are just covered with berries such as I send you. I have Smiths and Houghton and Industry growing in the same row with these King Conns, and the others are all more or less mildewed, but the Conn shows no sign of mildew, and the foliage looks as though it were made of green leather. I am delighted with this variety and would heartily advise every person to invest in a few, as they are first-class in every respect.—LEVI SELLICK.

Varieties of Small Fruits at London.

SIR :—I have three acres of Brandywine raspberries, which I think has no equal on the Continent. It is a large berry, firm, of excellent quality, and hardy in every respect. I have one acre of the Turner, some Cuthburt and Shaffer's Collossal, but they are nowhere compared to the Brandywine. I have one acre of the Mammoth Cluster, a splendid berry and a good bearer, also some of the Kittatinny. The price of raspberries at the present time in the city of London, wholesale, is ten cents per box ; which I think pays well indeed. I intend to enlarge and set out more fruit. I expect to take a trip to Grimsby and St. Catharines this fall, and so inspect some of the fruit growers' gardens in the Niagara district. The Grape I received last year made a splendid growth, and the Vergennes I received this spring was doing well when the heavy frost took it, but it has recovered and is growing nicely now.—JAMES A. POOL, *London East, July 15th.*

Russian Letter.

SIR,—I thank you very much for your kind reply, and also for sending me the very interesting Report of the Fruit Growers' Association of Ontario. Will you have the kindness to say to the members at the next meeting of that respectable society, that I wish them to accept my best wishes for the prosperity of that body, but also that I am ready at any time to send them, without remuneration, some grafts and seeds of our fruits, in response to any selection

they may wish to make, and that I take the most lively interest in all the affairs of the society. It is to be regretted that the Russian productions have lost their true names in America, which is the only means we have of knowing the kinds you lack, and it is therefore difficult to complete your collections. It would be desirable that besides the English name, there be placed, in parenthesis, the corresponding one in Russian. They say that the nomenclature of fruits is not established with us; but tell me, on the other hand, where it is established? In America only perhaps, and that because the country is young and the varieties are new. But bye-and-bye, as in Europe, each fruit will have a dozen synonyms.

Yet, in spite of the chaos of our nomenclature, we have some persons who know perfectly well the Russian fruits, but it is not necessary to search for them among the foreign botanists at the botanic garden of St. Petersburg and at the Academy of Peter the Great of Moscow.

I would like if you would send me the following: (1) As many scions as possible of the Idaho Pear, which interests us very much. (2) An assortment, pretty large, but choice, of Canadian apples, 10 or 15 scions of each variety. (3) Some seeds of grapes which ripen in Canada. (4) Some stones of Canadian plums.

I will send you next winter for distribution among the members of the Society, some scions of "Stone-Antonovka," some bushes of "Koslov Morello" and some pears which are hardy.

I will send you from time to time some notes of Russian fruits and vegetables which may be cultivated in Canada.—JAROSLAV NIEMETZ, Counsellor of State, *Odessa, June 25, 1889.*

The Belle de Boscoop Apple.

SIR,—Would you, or some of the subscribers to your valuable paper, give me information about the keeping qualities of the Belle de Boscoop apple. I had about one-half bushel off a top graft, and my children found them so good that they disappeared early in January. The grafts made a very vigorous growth, the fruit in shape being very much like Ben Davis and far better in quality, but not quite as well coloured. I sold the last of the Ben Davis on the 8th of June, and if the Belle de Boscoop was as good a keeper I would prefer planting it. I began selling Yellow Transparent the last week in July and finished the Ben Davis the first week in June, making a long season to sell apples in.

This cold wet June is causing our Fameuse to spot. I have always noticed that a season too cold for corn to grow is a time for apples to spot also. By the appearance of the trees at the present time, those that are free from spot are the Yellow Transparent, Wealthy, Golden White, Alexander, Ben Davis and Golden Russett, the two last having immense crops. Nothing like Paris green for the tent and other caterpillar. I tried one of the McGee force pumps but they were no use for large orchards; the wooden piston soon wore out and sent as much poison on our faces as on the trees. I would advise our friend Mr. Croil to get the National force pump manufactured by J. A. McMartin, Craig St., Montreal. He supplies the hose, nozzle, etc., ready to be applied to an empty coal oil barrel. I used it on twenty-five acres of orchard and eighteen acres of potatoes. The price was $12, and I would not do without it for a good deal.—R. BRODIE, *St. Henry, of Montreal.*

NOTE.—We have not this apple, and have enquired of Dr. Hoskins, of Vermont, who writes: "I have no experience with the *Belle de Boscoop*, except so far as to have learned that it is not hardy here.

Wellington County.

SIR,—I see by the HORTICULTURIST that you received reports from a number of counties giving the results of Jack Frost's sad havoc. So far as this part of the country is affected I might say it is ditto to most of the others. Apples, plums, pears and cherries are very much a failure. Gooseberries and currents are a fair crop. Raspberries very scarce. Grapes of course are nowhere, although a good number of the dormant buds started making new shoots and setting a few bunches of fruit. Still the season is too short for their maturity. So far as apples, plums and cherries are concerned they won't be all lost for they required a rest from last year's production. I may state to you that this has been a year of discovery with me. I have really solved the problem of effectually stopping mildew on the gooseberry. My Whitsmiths and Industries were badly affected with it but I saved both bushes and crop in good order. I also think I have discovered how to prevent the black currant borer. None of the black currants have dropped off this season so far, and the gooseberries much less than formerly and if I had repeated the operation with the last I believe my success would have been all I could expect. I have also succeeded in growing both the grape and plum from green cuttings (not bad for an amateur) although I presume it is no secret to your professionals.

I am glad to see the HORTICULTURIST keep abreast of the times. It is now a valuable dispenser of knowledge in its sphere.—F. W. PORTER, *Mount Forest, Ont., 25th July, 1889.*

Encouraging Words From the Cold North.

I SEND your by this mail samples of the Vladimir and Wragg cherries. The Vladimir

has been growing on my grounds for four years and appears as yet to be quite hardy. It is of a low growing bushy habit, but as mine has been planted in such a place as to be mostly below the snow line in winter, I would not like to speak positively as to its cold-resisting properties when entirely exposed. The indications, however, are that it will be quite "ironclad" enough for our inclement winters. Unfortunately the fruit is not as good as we would like, but will do where we can get no better.

The Wragg cherry mentioned above is one of which I hope much. It was sent me three years ago from Central Iowa where it originated. There, it has been tested for fifteen years with favorable results. The fruit is large, of a darkish red colour, resembling the English Morello, and a great improvement in quality on the Vladimir. The tree is an early bearer and has every indication of being hardy enough for our test winters without injury. Mine is still only a small tree and I would not like to speak too confidently of it till I have a more extended trial of it.

Our northern friends should certainly give it a fair trial and I do not think they will be disappointed.—A. A. WRIGHT, *Renfrew, July, 1889.*

The Detroit International Fair.

Your kind favor of the 20th inst., arrived during my absence from home, in attendance upon the summer meeting of our state Horticultural Society and at Detroit, to effect the preliminary arrangements for our department of the fair.

The buildings and grounds are already in a state of forwardness; and the arrangements are being matured on the most permanent and effective basis; the convenience of access from the city by street cars, railway, and steamer could hardly be improved, and the roomy and generally satisfactory arrangements of the building promises to be all that need be desired.

I regret that your Society cannot exhibit as such; am greatly obliged for your expressed purpose to invite attention to the matter through the HORTICULTURIST; and trust to receive individual exhibits as suggested. I will send premium lists whenever desired.—T. T. LYON, *South Haven, Mich., July, 29th.*

OUR FRUIT MARKETS.

Montreal.

WE sold some Canadian Peaches to-day, $1.40 per basket; blackberries, 10 to 12 cts.; blackrasps, 7 to 10 cts.; raspberries, 11 to 13 cts.; apples, all Southern stock, selling well, $3.25 per bbl. About 1,500 bbls. per week arrives of that stock.—VIPOND, MCBRIDE & Co.

We have to report our market a little lower on red raspberries to-day. They sold as follows this morning:—Red raspberries, 12 cts.; black raspberries, 7 cts.; black thimble berries, 14 cts.; Canadian peaches, per basket, $1.50; red cherries, $1.50. We have had a few Canadian pears on this market, but they were very small and poor, but we expect that the next few days will bring in a good many; and, as the crop is large, we would advise our shippers to get them into market as soon as possible. Apples selling at $3.50 per barrel. All consignments shall have our very best care.—J. J. VIPOND & Co.

OUR BOOK TABLE.

ANNUAL REPORT OF THE SECRETARY FOR AGRICULTURE, NOVA SCOTIA, 1888.

A. B. C. IN CHEESE MAKING, a pamphlet by J. H. Monard, Winnetka, Ill. Price 25c.

PRIZE LIST, Industrial Exhibition, Toronto, September 9-21, 1889. H. J. Hill, Manager.

CALENDAR QUEEN'S COLLEGE AND UNIVERSITY, KINGSTON, CANADA, for year 1889-90.

REPORT AGRICULTURAL EXPERIMENTAL STATION OF THE UNIVERSITY OF MINNESOTA, E. D. Porter, Director.

PRIZE LIST CENTRAL CANADA FAIR, OTTAWA, 9th to 14th September, 1889. Office, 39 Queen Street, Ottawa.

PREMIUM LIST DETROIT INTERNATIONAL FAIR & EXPOSITION, September 17th to 27th, 1889. C. W. Robinson, General Manager, Detroit, Michigan. The Horticultural Department of this Fair is to be under the charge of

the Michigan State Horticultural Society, and therefore is of special interest to us as members of the Ontario Fruit Growers' Association. A letter has been received from President Lyon, of New Haven, Michigan, asking that we should make an exhibit as an Association. This the Directors thought not best to attempt, but at the same time would call the attention of all members of our Association to this Fair, who may receive prize lists on application to Mr. T. T. Lyon. His letter also appears in another column.

HORTICULTURE IN MINNESOTA.—We have just received the Report of the Minnesota State Horticultural Society, a well bound volume of 477 pages. It differs from ours in several particulars, and especially in having a large number of sub-reports from various committees, and from the various local horticultural societies of the state. This latter feature might, perhaps, be very wisely adopted by us, if the secretaries of all local societies in Ontario would send in their addresses and in response to our call, give us some account of their year's work for publication. There are also two dozen committees on such subjects as Floriculture, Small Fruits, Vegetable Gardening, Deciduous Trees, Russian Fruits, Forestry, Ornithology, etc., etc., all of which are expected to report at the annual meeting following their appointment.

GARDENER'S SONG.

H! a gardener's life is as pleasant a life
As a working-man's can be:
'Tis a glad pursuit to plant the root,
And nurse the flower and tree.
His life is set to ceaseless song,
Sweeter than poet can sing,
Warbled in notes from the feather'd throats
Of the birds, from summer to spring.
And doth he not make the wildest brake
Gay as a conqueror's fleet?
For his strong right hand is the magic wand
That brings fresh flowers to our feet.

With a sneer or a frown a man may look down
Upon many ignoble trades;
But Purple and Pride even dare not deride
The work of the King of Spades.
The oldest craft known he claims as his own,
The only work Heaven thought well
Should be done by a man ere a trouble began,
Or the "grand old gardener" fell.
Then the men of the spade should be proud of their trade,
Invading no crowded mart,
Whose daily toil gives wealth to the soil,
And joy to the home and heart.

—*Rowland Brown, in the "Gardener's Magazine."*

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THE RED-FLOWERING DOGWOOD.

WE have only one genus of the Dogwood family in Ontario, viz., the Cornus, a name given it with reference to the hardness of its wood. Of this genus we have in Ontario seven species, to some of which we shall briefly refer. The Red Osier Dogwood (*Cornus stolonifera*) grows abundantly in the Niagara district, along our fences, and is a very ornamental bush on account of its bright red-purple branches and its white berries. The Bunch-berry (*Cornus Canadensis*) is a small plant, which we found growing plentifully about Gravenhurst, and around Muskoka lake, blooming about the first of July. The Flowering Dogwood (*Cornus Florida*) is a small tree, reaching sometimes a height of twenty or even thirty feet, and is very ornamental both in fruit and flower. The flowers are white, often tinged with a shade of pink, and the berries are a bright scarlet. This tree is very frequently met with in rocky woods in the Niagara district; we have found it in flower about Grimsby, and near the village of Fonthill, about the beginning of June.

The Red Flowering Dogwood, of which our colored plate is an illustration, is simply a variety of the latter species, and Mr. Thos. Meehan, of Germantown, Philadelphia, speaks of it as follows:—

"In walking through the woods in Spring when the White Dogwoods are in bloom, we have often seen flowers that had quite a tinge of pink running through them, though not sufficient to make them particularly desirable. When this new red flowered variety was first introduced, many persons thought it was but one of these light pink forms, that was perhaps a trifle more marked than some of the wild white ones. Being anxious to learn just what merit it possessed, through the kindness of the originator, we secured some flowers of it, and upon opening the box were agreeably surprised to find them of the most beautiful rosy pink

color, somewhat bordering on red. A growing plant before us also showed the leaves to have a rich velvety appearance, and to be darker than the white variety. So much so, that it was quite easy to distinguish them, when growing side by side. The tree makes a close upright growth, another characteristic of its own.

Whether the bunches of scarlet berries will follow after the flowers have dropped, we are unable to say, but we see no reason to the contrary.

That this is undoubtedly a grand acquisition to the list of ornamental flowering trees, no one will doubt after seeing it in bloom. Can anyone imagine a more beautiful or unique group on the lawn, than the Red Flowered, the White Flowered and the Weeping Dogwood.'

A RAMBLE IN VICTORIA PARK AND VICINITY.

THE term of Lord Dufferin's rule, as Governor-General of Canada, will long be had in grateful remembrance by that large and constantly increasing number of excursionists from both sides of the line, who, tired with the press of business cares whether of farm, orchard or office, seek much needed rest and recreation without incurring extravagant expenditure. It was in the autumn of 1878 that the suggestion concerning an International Park was made by Lord Dufferin to Governor Robinson, of New York, and in May 1888, that the Victoria Niagara Falls Park was opened to visitors; that on the American side having been opened some three years previously.

To any one who has not visited this park since its emancipation from private greed, the sense of relief, with which one can now view this world-renowned cataract and its surroundings, is most gratifying. From the Clifton House right away past the Horse-shoe Falls, for a distance of two and a half miles, an area of some one hundred and fifty acres has been improved and beautified by the park commissioners, in a manner which reflects credit upon their taste and good judgment. An effort has been made to restore to the whole surroundings, as much as possible, their natural beauty; and to this end all unsightly buildings have been removed, and the dusty roadway by the riverside replaced by a narrow walk, bordered with grass and trees, and here and there a rustic seat, and a drinking fountain. The rustic entrance is most appropriate in design, and the boundary fences are made of almost invisible gas piping; thus there is little to obstruct or to offend even the cultivated eye of the critical observer.

THE FLORA

of this locality is very rich, and the

botanical student will here find much to enrich his herbarium. It is stated that as many as 500 species have been identified, a list of which has been compiled and published. No wonder the idea occurred to Prof. Panton, of the Ontario Agricultural College, that here would be an admirable point at which to gather a band of students for practical instruction in the sciences of Botany and Geology during the summer vacation. We met him on the afternoon of Tuesday, the 23rd of July, leading a band of twenty-six ladies and gentlemen, for an excursion along the river margin in search of specimens for analysing,

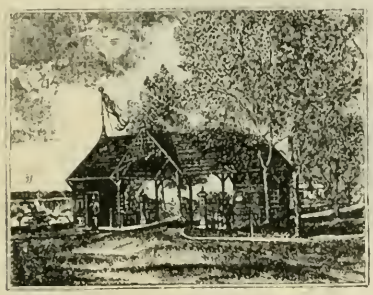


Fig. 63—The Principal Entrance.

each one with his copy of Spotton's Botany, and many of them provided with tin boxes slung from the shoulder for the better preservation of the plants. Many of the students were teachers preparing in this way for more thorough work in their own schools. We followed the peripatetic Professor on an excursion along the margin of the river, listening to his practical method of teaching; and on the following morning attended two of his morning lectures. The course, it seems, extends over a period of two weeks, and consists of a series of lectures in Botany and Geology, ten on each subject. We believe this is the true way to study these sciences, viz: beginning with the objects themselves, and gradually proceeding toward the technical and the abstract. The contrast was very marked with the university mode of years ago, when we waded through books and took notes of lectures upon these subjects, committing whole pages of technical names, and of classifications, without so much as ever seeing the objects themselves.

In our ramble along the river margin we found a beautiful specimen of *Campanula Americana*, the tall Bell-flower, in full bloom, and also the coarse growing *Polymnia Canadensis* or Leaf Cup, which is only known to occur here. But the richest returns were found in the walk to the

DUFFERIN ISLANDS

than which a more attractive resort for the lover of Nature can not well be imagined. "Riverside Ramble;" "Lovers' Walk"; "Lovers' Retreat," etc., are names suggestive enough of romantic retirement; and the reality is no disappointment. Amid the dense forest growth through which these walks are laid out, leading the rambler across rustic bridges, along streams and brooks, lined with ferns and wild shrubs of many species, numerous fine specimens were found. *Daphne mezereum* was there in abundance, with its load of red berries, as also was *Actaea spicata*, with similar fruit, known commonly as the Baneberry. *Onoclea sensibilis* or the Sensitive fern, grows abundantly in wet places

on these islands. Along the border of a marshy place, peeping through the grasses, we found the pretty little light-blue flower of *Lobelia Kalmii*, and, near by, plants of the strong scented *Hedeoma*, or Mock Penny-royal. Laden with such treasures as these, we found our way to our head-quarters for rest and refreshment. Finding that we were in the vicinity of the great Lundy's Lane, and

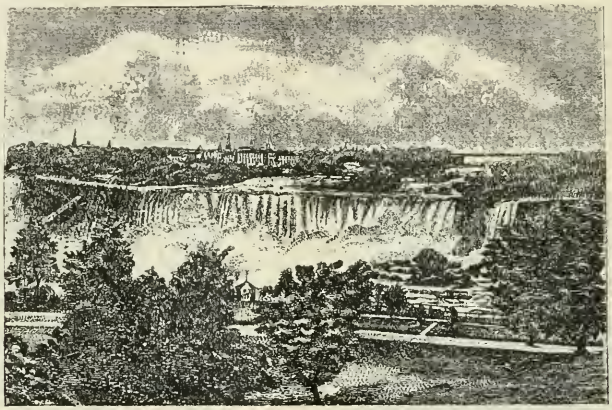


Fig. 64—American Falls—from Bluff Overlooking Park.

that the whole neighborhood was devoted more or less to

FRUIT CULTURE,

we decided to trace out some members of our fruit-growing fraternity. We were soon directed to the residence of Mr. E. Morden, who took pleasure in showing us over his plantation of small fruits. Although his place is not large, only twenty-five acres, of which twelve are devoted to fruit culture and the propagation of plants, it is a model of cleanliness; a point worthy of mention in these days of grass-grown vineyards and shabbily kept raspberry plantations. He plants his currants, gooseberries raspberries, etc., all six feet one way and four feet the other, so that he can cultivate two ways, a great saving of hand labor over the common method of planting in rows one way only. He complains that the Souhegans and Tylers have suffered very much from rust. The same was also true of the Saunders, of which he has quite a large number. He does not recommend this variety, both on account of rust and because its small size and poor color make it less attractive than the Shaffer. This latter variety he has tested pretty well, but in size our plants and fruit at Grimsby are ahead. He says he has no difficulty in selling the fruit when once it is known, but otherwise its color is a serious objection. From a commercial point of view he would place the Shaffer ahead of the Gregg, as it is more productive, but he does not consider it equal to the Cuthbert for profit. He thinks well of the Honey Locust as a hedge plant. He has one now about five years planted

and it is a sufficient barrier to turn cattle. Mr. Morden sells all his fruit on the American side of the river, where he claims that he can get the best prices. We are not surprised therefore to find that he is an ardent advocate of Commercial Union.

SEASONABLE HINTS FOR FRUIT GROWERS.

ONE year ago, on page 195, volume xi., of this journal, we gave our readers some information upon the quickest methods of packing apples for shipping to foreign markets, with an engraving of a convenient packing table, one of a handy crate to be used in the orchard for bringing apples into the packing house, and making some reference also to a Yankee invention for gathering apples, an illustration of which has been given on page 149 of the present volume. Progress and improvment being the motto of Canadian fruit growers, we hope that a year's experience has taught us something worthy of mention in addition to what we knew a year ago.

FOR NEAR MARKETS,

there is nothing gained as a rule in gathering fruit of any kind before it has attained its full beauty, and a certain degree of ripeness. It is a great temptation to do this when prices are up, and a drop is feared, but immature fruit is a drug in a dealer's hands, and the shipper soon receives word that no more is wanted. Experience only, however, can fit a man to judge just in what stage of ripeness a fruit should be gathered. The writer has, for some years, been in the habit of growing summer apples for near city markets, and has learned some lessons in this respect. He has one hundred and twenty bearing trees of Red Astracans, and no kind has proved to be more remunerative when properly handled. Our practice is to go over each tree about twice a week for about three weeks, taking off the fruit as it ripens and colors up. The Astracan, is a beautiful apple, when it has its full color, but to get it just in its prime of excellence the trees must be gone over very often. As fast as gathered they are brought into the packing house in a spring wagon, and assorted. They are turned out upon an inclined packing table, and the extras, or perfectly formed, highly colored fruit, such as is suitable for table use and dessert purposes, is packed very carefully by itself in baskets, while all the rest is put up in barrels. None but the very finest will pay for the trouble of putting up in baskets and sending into market by express, the rest will do much better in barrels. We found that by carefully keeping our fruit up to sample we could get a pretty constant price for it right through the season, even when apples were coming in abundantly. They seemed to become known and sought for in the market.

It is a great deal of trouble to gather a crop of apples in this way, and to do it on a large scale requires constant attention. Summer apples would not pay the farmer, for they need harvesting just when he is busy with farm crops. Just now, for example, (Aug. 13th) a part of our force has to be detached to harvest a field of oats, and that means a waste of pears and apples that are now ripening, and in most seasons, it would be of peaches also. An

APPLE-PICKER

is a useful tool in gathering the first ripe apples and peaches, very often saving the use of a ladder where it would otherwise need to be set up and climbed for a single specimen in a place. We use the apple-picker described on page 283 of volume ix, but a device that will answer the purpose, may be easily made at home on a rainy day at a trifling expense. We noticed a description of one in the *Kansas Farmer*, by Wm. C. Coleman, which we give for the benefit of any one of our readers who may desire to have a home-made one:—

Take a hard-wood board one inch thick, mark on it a circle seven and one-half inches in diameter, inside of this draw another circle six inches in diameter, between the two circles bore one-fourth inch holes one and one-half inches apart, cut the wood away from the outside circle, and you have the back of the apple-picker. Next, make enough round, hard-wood pegs, six inches long, to fill the holes. Before driving in the pegs fasten the handle to the back. The handle should be a light strong pole, six or eight feet long. Now drive in the pegs or teeth, be careful not to drive too hard and split the back.

When it is finished it looks so simple that you wonder you hadn't thought of it long ago. With it you can pick the choicest apples, which always grow on the top branches, without bruising; and instead of standing on a ladder all day you can pick most of your apples from the ground.

TREATMENT OF THE RASPBERRY PLANTATION.

Many of our fruit growers neglect to cut out the old canes of their raspberry and blackberry bushes until the spring after they have fruited, either from neglect or because of a notion that they afford some protection to the young canes. The only possible use in this respect, which they can serve, is in helping to gather snow banks about them, a very inefficient means of securing winter protection. If in a place where it is necessary to protect them, some better method should be adopted than that of leaving a mass of ugly, straggling brush standing in the rows, impeding the growth of the young shoots and spoiling the whole appearance of the plantation.

To this we will refer in a future number; and in the meantime advise our readers, if they have not already done so, to make no delay in cutting out the old canes, and in thinning out the new ones to three or four from each stool; for this will allow all the strength to go to the development of the bearing canes for the next year, and give more room for their proper development.

Some of the small fruit growers at Grimsby have just completed the task of clearing up their plantations in this way, and the better condition for growth and fruit bearing strikes even the least observant passer-by.

Where the canes were shortened back in the month of July, it will now be in order to cut back the side shoots, especially of the blackberry bushes; for the greater number of fruit buds that we can grow near the

ground, the better. All this rubbish ought to be gathered up and burned, if any reputation is wanted as a tidy cultivator.

STRAWBERRY PLANTS.

We hear a great deal about potted plants, and no doubt that for removing a long distance, they are very desirable; but on one's own place, in a wet time, young plants may be removed quite as successfully without any pots. They may be lifted with a spade and a ball of earth, in such a manner as to be almost unchecked in growth, and if done before the end of August, they will bear a fair crop the next year. Wm. Falconer says in a late number of the R. N. Y., that from plants set in July or August, he gets a capital crop the following June, and invariably his largest berries.

The *Jessie* receives a great variety of criticisms, both favorable and adverse. Our own were in no way disappointing, being fully up in size to all expectations. But most people are too ready to pass judgment on a new thing, after the very slightest experience. It is not enough to have a few plants in the garden; one needs a large plantation to be able to judge fairly. Secretary Williams, of New Jersey, speaks very favorably of this berry, but prefers the Pearl, because more regular in shape. The Jessie is larger, but has a tendency, inherited from the Sharpless, to ripen unevenly, and to lose its flavor soon after ripening.

Of the *Bubach* he speaks very favorably as follows: "Bubach is the most promising of the newer varieties, fruiting with me this season for the first time. It is early, large, bright-colored, handsome, vigorous and productive, and ripens evenly—all valuable traits in any berry. The quality is hardly up to that of some of the others, but still I think it will do to plant more of it." Secy. Crawford also commends the Bubach as being the "largest berry that bears a heavy crop. The plant is faultless. The blossom is pistillate and quite hardy. The berry is not firm enough for a distant market, but it is the berry for a home market.

Little's No. 4., a seedling of our old friend, Mr. John Little, of Granton, is also highly commended by Mr. Crawford. He says "This was the finest berry, all things considered, that I fruited this season. The plant is strong and vigorous, has a perfect blossom, and continues in bloom a very long time. I think it is the most productive very large berry that I have ever seen." This accords with our own experience with it this season. Its free bearing and immense size were points that we noted down especially, but we intended to give it another year's trial before speaking of it.

We have now about fifty varieties under trial at Maplehurst, and we hope to make the results helpful to the members of our Association in course of time.

SUCCESS WITH ENGLISH GOOSEBERRIES.

MR. EDITOR,—The gooseberry season being now nearly over, I shall give your readers a few words regarding some experiments which I have been making with English varieties of that fruit. I have been testing forty different kinds, and am convinced that with generous treatment and careful pruning, with a view to renewing the wood, the only thing to be dreaded is *overbearing*. If the bushes are not allowed to rest, by stripping them almost entirely of their fruit, at least once in eight years, there is a great likelihood of the bushes becoming exhausted, and eventually dying. This has been my experience with the Crown Bob, Whitesmith, Red Warrington and Ocean Wave, which I have grown for the last fifteen years.

During that time I have had an abundant crop every year, except with the exhausted bushes, and have had no trace of mildew on any of the English sorts. I feel persuaded that on a clay or clay loam soil with proper care mildew need not be feared; on sandy soil or a sandy loam I have no experience and cannot speak.

I know of no other small fruit which will give such abundant crops or so well reward the labor of its cultivator.

I am in favor of training the bushes to a single stem of about eight inches from the surface of the ground to where they branch out. I have tried stems fifteen inches high but found the plants were not so vigorous in growth, did not bear so heavily, and were not so long-lived. The nearer the ground, while securing a free circulation of air under the branches, the better.

The severe frost this spring caused a good many of the blossoms and partly formed fruit to drop off, and the intense heat in July injured many more, causing them to whiten on the side exposed to the rays of the sun, and by and by to drop off, while others not so badly scalded by the sun were so injured that they did not mature properly. The Industry suffered most from the heat. Fully one-half dropped off and the remainder were so injured that I failed to get a single good berry. My experience of this variety leads me to believe that it has been greatly over-estimated. It has not yielded such large crops nor is it equal in quality to the most of the English sorts which I have tested.

The following tabulated statement, which will be found on the next page, is the result of my experience :—

The others, I have not their names or have not sufficiently tried them to decide on their merits.

In conclusion I would suggest that some of our hybridizers would be rewarded by hybridizing with the pollen of some good English variety on the best American, and would confer a great boon upon those whose soil is sandy.

ANALYSIS OF SIZE, ETC., OF GOOSEBERRIES.

NAME.	SIZE.	QUALITY.	BEARING.
RED VARIETIES.			
Industry	3¼ x 2¾ in.	Moderate	Good bearer
London	3¾ x 3	Good	"
Speedwell	3½ x 3	Excellent	"
Red Warrington	3 x 2½	Delicious	Heavy bearer
Lancashire Lad	3½ x 2¾	Excellent	Good bearer
Rifleman	3¼ x 2¾	Good	"
Dan's Mistake	3¼ x 2¾	Not a good table but excellent preserving	"
Bloodhound	3¾ x 3¼	Superior	"
One of them	4¼ x 3½	"	Heavy bearer
Smolenski	3¾ x 3¼	"	Good bearer
Wonderful	4 x 3½	"	Heavy bearer
Crown Bob	3½ x 3	"	Very heavy bearer
GREEN VARIETIES			
Ocean Wave	4 x 3¼	Superior	Heavy bearer
Thumper	4 x 3¼	"	"
Duke of Sutherland	3¾ x 3¼	"	"
Freedom	3½ x 3	"	
Jolly Angler	4 x 3¼	"	
Stockwell	4 x 3½	"	
Ringer	3¾ x 3¼	"	Abundant
YELLOW VARIETIES.			
Two to one	4¼ x 3¾	Very good	Good bearer (not fully tested)
Companion	3¾ x 3¼	Good	"
Coiner	4 x 3½	"	"
Shiner	4¼ x 3½	"	"
Princess Royal	3½ x 3	"	"
Leveller	4 x 3½	"	"
Queen of Trumps	3½ x 3	Moderate	"
Catherina	3½ x 3	Good	"
Plunder	4 x 3½	"	"
Overseer	3¾ x 3¼	"	"
Keepsake	3¼ x 3	"	"
Champagne	4 x 3½	Superior	Abundant
WHITE VARIETIES.			
Whitesmith	3½ x 3	Excellent	Abundant

A. MORTON, *Brampton, Ont.*

August, 1889.

PREVENTION OF GOOSEBERRY MILDEW.

IN the August number of the Horticulturist Mr. F. W. Porter, of Mount Forest, writes that he has solved the problem of effectually stopping the mildew on the gooseberry. The experiences of another year in gooseberry culture have added further strength to my conviction that plenty of air, plenty of sunlight and a liberal use of hardwood ashes as a top dressing are all that one requires to effectually prevent mildew. The solution, you will see then, is a very simple and natural one. For three years I have experimented with ashes in gooseberry

culture, and my success has been gratifying in the highest degree. Last year every grower of the Whitesmith in town, except myself, complained that the fruit was not worth picking on account of tne mildew. Out of my fifty bushes of that variety not a single specimen could be found that was not as clean and bright as it is possible for a berry to be. This year other growers in town have suffered to a greater or less extent, while I have invited my friends to go through my Whitesmiths, Golden Drop, Industry, Crown Bob, and a large English variety, and find a mildewed specimen if they could. They could not do it. My soil is a clay loam with a western slope, giving it a fair natural drainage. I have my Whitesmiths planted five feet apart and Industry four feet apart, in the row, with six feet between the rows. I dig about the bushes every spring and apply a coat of ashes immediately underneath them every second year; and for size and thriftiness of bush, for heavy bearing and for the size and perfection of the fruit several experts have told me that my garden excelled anything they had seen.

Now, in this matter I do not claim to have solved any problem. Nature's methods are perfect and if unobstructed in her operations she will give perfect results. Let the sunlight into the bushes; give plenty of room for a free circulation of air; purify the soil with unleached ashes and if the results are not satisfactory I have studied nature's methods and operations in vain, and my faith and confidence in her laws governing the vegetable kingdom have been misplaced.—T. H. Race, *Mitchell, Aug. 17, 1889.*

A NEW JERSEYMAN'S REVIEW OF THE STRAWBERRY SEASON.

CRYSTAL CITY came in a week ahead of other varieties. We have tried nothing yet which will take the place of it for the table as it is so early and so good, but it is not sufficiently productive for the market. May King is also a necessity on account of its extra quality, and it sometimes produces paying crops for market, but oftener not over two-thirds as much as Crescent and other market sorts.

Among newer varieties *Warfield* No 2 is most promising for market. It is pistillate, and an immense runner like the Crescent, and like that makes rather small plants under ordinary circumstances, but the berries are fifty per cent. larger on an average through the season, firmer and of better color, and at least as productive, a small plat of them (1-40 of an acre) having produced this season at the rate of nearly 7,000 qts. per acre with ordinary treatment. This berry is broadly conical with a slight neck, of a bright crimson scarlet as usually picked for market, coloring all over very evenly. When fully ripe it is a dark glossy crimson. It is, however, too acid to eat without plenty of sugar and cream. Decidedly promising.

Haverland, another pistillate variety, is equally large and productive, and would be equal as a market berry if not rather light in color which is a light scarlet. It is not so acid as Warfield, but rather watery and insipid in flavor. Some of these, which were transplanted in May, when nearly ready to bloom, produced a fair crop. *Gandy* is a promising very late variety, being this season just two weeks later than Crystal city. It is an exceptionally strong grower, and the first berries which ripened were the largest of the season, but the balance of the crop has not kept up the extra size. In color it is a bright scarlet; the quality is good, and it is firmer than any other variety we ever tried, except Atlantic, but it has not this season produced enough to make it a paying variety for market, and a considerable per cent. of the berries have a hard tip. In spite of these defects, however, we value it highly as a late variety for our table, and think it has come to stay.

We hoped to see *Jessie* turn out a bigger crop this season than last but it has not done so, and although it has some excellent qualities as a market berry, prominent among which is great firmness, we fear that for our section, it will only be retained for its extra quality, and will not be much grown for market. It also has the fault of being very variable in size, producing some very large berries and quite as many small ones.

Bubach No. 5, is remarkable for size of growth, very large and very productive, yet I do not like it; it is soft, and most of the berries cockscombed with deep and irregular sutures between the lobes.

Bomba, with us, rusted both last year and this worse than any other variety, and of course the fruit was worthless. *Pearl I* has only been fruiting on very poor sandy land without culture, and it produced all that could be reasonably expected. The berries are good size and good in quality and fairly firm, but not very bright in color. Plants which we set in September last on good soil are making a vigorous growth.

Cloud's Seedling set this spring gives promise of being more productive, and of larger size than any other very early variety we have yet seen, and it is of fairly good quality, but not nearly as good as Crystal City. Among older varieties which have some excellent points we shall retain *Prince of Berries* and *Indiana*, the former for its good quality and lateness; both would be good market vatieties if a *little* more productive.—*W. F. Bassett, in Popular Gardening.*

GRAIN AND FRUIT A POOR COMBINATION.

THROWING AWAY THE POUND TO GET THE PENNY.

THE practice of sowing wheat, oats or barley in orchards even after they have reached fair bearing age, seems to be still quite common among farmers. At least orchards thus treated can be found in every neighborhood. On its very face the practice appears like robbing Peter to pay Paul. In fact, it is much worse. We should bear in mind that the same amount of plant food needed for the production of thirty bushels of wheat is more than sufficient for the production of 600 bushels of apples, or a corresponding quantity of other fruits. Suppose an acre of apple orchard contains sufficient plant food for thirty bushels of wheat crop. If we devote all this raw material to its legiti-

mate purpose (the production of fruit) we will raise on that acre, say 600 bushels of good apples, worth $1 50 or upwards. Many farmers, not satisfied with this, attempt a system of double cropping, and sowing wheat among the trees, use up half of the plant food in the production of fifteen bushels of wheat, worth not over $15, thus leaving only raw material enough for half a crop of apples.

In the spring the trees had made all preparations for a full crop, setting fruit freely, and this fruit, for the want of the needed supply of food which the wheat has consumed meanwhile, remains partly undeveloped and undersized, so that the market value of even that half crop grown is greatly impaired. The half crop will certainly not be worth half the money, and the 300 bushels are much more liable to bring less than $60 than to bring more. Now let us compare results. The apples grown without grain gave us $150. From the grain and fruit combination we receive $60 for fruit and $15 for grain, an aggregate of $75. This amounts to a loss of $75 per acre ; and it is a loss plainly traceable to double cropping. In other words, the cost of production of every bushel of wheat grown in a bearing orchard is not less than $5. I think this is a plain statement, and should convince every grower the extreme folly of the practice. Now I might follow up this line of inquiry, and also call attention to the sickly look, the yellowish leaves, and the feeble growth generally found in orchards habitually cropped with grain. The loss, figured out, is not a temporary one. The injury to the trees themselves is still more serious, as it is permanent and in a measure irreparable. Robbed of the mineral plant food, the trees are stunted, and forever incapable of producing first-class fruit, unless, perhaps, by the most careful nursing afterwards.

The best treatment that could be given to an orchard injudiciously put in grain last spring, is to let stock tramp down or eat up the halms before the grain is formed, or to mow it at this period and leave it right on the ground where it fell as a mulch.—*T. G. R., in American Garden.*

CAUTION IN THE USE OF POISON.

AT the latest meeting of the Social Science Association, reports proved that not one New England homestead out of twenty is conducted on correct sanitary principles. The cellar, as yet built and used, is still almost invariably a pestilential adjunct to homes. Probably the only means of avoiding the danger arising from these dug-outs, will be to dispense with them altogether. In their place we should build underground storehouses separate from the houses.

Certainly it has become a criminal affair to reside and rear children above damp rooms in which are stored large quantities of vegetables and fruits undergoing a slow process of decomposition. The most careful attention to ventilation and removal of waste will not keep such apartments safe when located under our living and sleeping rooms. Recent scientific investigation has shown it to be beyond question that the typhoid fevers and diphtherias, with a thousand minor forms of disease, are traceable to precisely these causes. The skilled physician finding the disease, immediately searches for a neglected cellar, or sewer, or poison-infested well.

But I desire to call attention to some other sources of danger.

At this moment I am suffering

from a unique and yet not an uncommon sort of poisoning. Having placed a lawn chair, covered with a coat of cheap green paint, in my study, the arsenic contained in the paint was volatized by the heat of the radiator until my whole system was penetrated with the mineral. It will be months before I will recover my health.

The use of arsenicated paints is growing more and more common, but should never be tolerated on furniture or wall inside the house. Green shades of wall paper are to be avoided as probably containing arsenic. Whole families have been poisoned by such apparently harmless decorations.

The extensive use now made of Paris green and other arsenical poisons should be a warning to us. Some of our ablest physicians insist that there are forms of disease traceable directly to the presence of arsenic in the potato. This, I doubt, and yet it seems certain that the use of arsenic on vegetation more or less checking the perfectly healthy development of the leaves, produces a chemical change in the tubers detrimental to health.

It is getting almost impossible to purchase potatoes entirely free from a tinge of bitterness, while a very large part of the potatoes that find their way to market are quite unfit for use. Many farmers use five or ten times as much Paris green on a potato field as is necessary for the purpose of destroying the Colorado beetle.

The practice of sprinkling Paris green into cabbage heads is criminal and inexcusable.

I have recently seen the account of five persons having been killed by the use of such cabbage.

Probably there is no direct danger, from the recently derived method of spraying apple and plum trees, to the fruit eater, but there is serious danger to those who handle the poisons. Paris green should be used and stored with every precaution. We are getting quite too familiar with the drug and are losing our fear of it.—*Maryland Farmer.*

CULTIVATION OF PEACH ORCHARDS.

IT has been our experience that the best cultivated orchards pay the best. The trees thrive admirably under the severest cultivation. It might seem that the mutilation of the roots of a tree, while in a growing state and so near the surface as are those of the peach, would enfeeble or kill it outright. But it is not so. The aerating and pulverising of the soil more than compensates for the injury to the roots. A leading and successful peach grower in Michigan says: "It puts me out of patience to hear any one whose opinion has any weight deprecate or discourage in any way the most thorough cultivation. I have an orchard which for eighteen years has been plowed annually, to the depth of five or six inches, some time in April or May; then in about two weeks when the weeds have sprung up, a heavy harrow has been passed over both ways. After this when the weeds were stronger and larger, a two-horse cultivator set to run four or five inches in depth has been passed over from three to five times during the season. This is each season's cultivation, and I suppose, according to many writer's views, that my trees ought to have been dead long ago; and yet I believe there are more peaches of the best quality grown on the same number of trees than in any

other orchard in the State. Trees eighteen years old have made a growth of from one to three feet in one season while bearing a heavy crop.

The cultivation required by the peach is simply to keep the surface mellow and free of weeds. In making the annual plowing in spring, it is well to use a light low plow, plowing very shallow. In after culture and for keeping the surface clean and mellow there is nothing better for performing the work rapidly and thoroughly than the Acme harrow.—*Orchard and Garden.*

THE SIMON'S PLUM.

Editor of the Horticulturist.

DEAR SIR,—I regret that through the effects of the late June frost I am not able to send you a perfect sample of the *Prunus Simoni* this year, my tree only bearing two specimens and those not perfect. I send you one of them which was stung hy the curculio or some other insect and dropped off, and though not quite up to your plate in size in the July number, I think you will agree with me that it is considerably above one-quarter of it as it measures 5½ inches in circumference; and I think you will agree with me, also, that we must have a better strain of this plum than our pomological friend, Mr. Van Deman, is accustomed to seeing, or that our Canadian soil is better adapted to their growth than that of the States. (The quality I do not expect to be perfect in its present partially decayed state.)—A. M. SMITH.

NOTE BY EDITOR.—The sample is very well represented in our colored plate in color and form, and in size it falls so little short that the plate can hardly be called an exaggeration. Indeed there is upon the tree another which exceeds this one in size, and when fully matured will probably equal the representation. We think, in this case at least, that Mr. Van Deman's criticism was over severe. We may add that the aroma of this fruit is most agreeable, and the quality very good indeed.

DECEASE OF REV. R. BURNET.

WHEN we gave our readers the sketch of Mr. Burnet's life in our January No. we had little thought of having to chronicle his death before the end of the same year. This sad event took place at Milton, Ont., on August 13th, at the age of sixty-six, and the news will be received with sincere regret by the officers and members of our Association, to which he rendered such active service during his Presidency.

FLOWERS

Support for Climbers Essential.

A distinctive fact in plant growth not generally thought of, is the waste of vital force in all vines unable to clasp surrounding objects by tendrils or by their young shoots. By actual experiment, the yield of flowers and fruits on uncared-for vines has been decreased sufficiently to prove that the little time needed to tend these plants at the proper season is a paying investment. Vegetable gardeners have long been aware of this in cultivating Lima Beans, although many of them may not know how very important it is to assist the tender tips to clasp the support. And the same rule governs growth and development of peas, especially the taller kinds. If no support is furnished them the inconvenience of gathering the crop is a small matter in comparison with the loss sustained by the plant in its efforts to climb as nature intended. The same law applies to plants cultivated for the flowers. Annuals, such as Cobœa, Baclyana, Cypress-vine, etc., will produce finer and more blossoms if supplied with adequate support than if permitted to struggle along unassisted. Perennial wood-climbers are no exception. If we remove the support from Wistarias, Tecomas, Celastrus, etc., their nature undergoes a change, and the inclination to climb is apparently lost, but if at any time some foreign body is placed near by, the old tendency returns, and the young shoots eagerly clasp it and at once begin their normal upward growth. Gardeners have taken advantage of this peculiarity, and, by close pruning as well as dispensing with any support, have metamorphosed the climber into a pretty tree-like shrub. The solution of this apparent mystery is not difficult. The change of habit is due to loss of vital force occasioned by the plant's struggle for its natural condition. This same principle may be exemplified in the grape, which, although producing a crop when pruned severely and tied to a single stake, does not yield so abundantly as when growing freely over an adequate trellis.—*Josiah Hoopes, in N. Y. Weekly Tribune.*

Management of House Plants.

One of the chief requisites in management of house plants is plenty of sunshine, next an atmosphere neither too dry, nor too close, and a uniform temperature, lower during the night than during the day.

Watering.—Rain water is better than spring, or well water. Hard water may be greatly improved by adding a drop or two of ammonia, or a little soda, a small nugget about the size of a pea to every gallon of water used. Morning is the best time to give water, and evening next. Never water house plants when the sun is shining brightly upon them. The supply of water must be regulated according to the demands of the plants. The condition of plant and soil is the best guide. Never give water when the soil is moist to the touch. Nearly all plants require more water when in bloom than at any other time, more in a warm temperature than in a cold, and more when in a state of active growth than when at rest. Plants in open rooms usually require water once a day and some demand it twice.

Syringing.—Cleanliness is essential. The leaves of plants should be kept free from dust, hence frequent washings are absolutely essential, although when watering, never wet

the flowers of a plant, nor allow drops of water to stand on the leaves in the sunshine. Never allow water to stand in the saucers of the pots unless the plants are semi-aquatic. Watering supplies plant food or elements of fertility contained in itself and converts the plant food, or nourishment of the soil into a liquid form, so that it may be absorbed by the roots. The roots of a plant should be kept moist, not wet. Where the drainage is the most perfect, plants will generally be the healthiest and will need watering the oftenest.

Give house plants as much light as possible during the day, and darkness with a lower temperature at night. A uniform temperature of 60 or 70 degrees in the daytime, and 40 to 45 degrees at night, will give the best results. Turning the plants toward the light should not be done, unless done regularly. Besides light, house plants require a good supply of fresh air. Ventilation is absolutely necessary.

Refreshing Cut Flowers.—The question is often asked, "How can I restore or refresh this flower?" It may be a rare flower, or one that is prized highly, as the gift of a friend. In either case joy will follow its restoration. Cut flowers have frequently been restored to freshness, even when every petal is drooping, by placing the stems in a cup of boiling hot water, leaving them until the petals have become quite smooth, then cutting off the cooked ends and placing in luke warm water. For this purpose rain water is thought preferable. The freshness of cut flowers is due wholly to two conditions. Either evaporation from the flowers must be prevented by enclosing in a case containing a saturated atmosphere, or the evaporation must be supplied by moisture at the cut end or stem. This stem is composed mostly of woody fiber, or cellulose, whose power to absorb water soon diminishes, hence to enable the stem to absorb the most water, the end must be frequently cut off.—*Sec. C. Watson, before Clyde Grange Nat. His. Soc.*

Fall Treatment of Roses.

Don't forget the roses this fall. Place a good covering of manure on the ground and fork it in very lightly next spring. Ever-blooming roses in the open ground must have special care. They should always be planted with two or three buds below the surface of the ground. There are very few tea roses hardy enough to winter out of doors in New England. But the hybrid teas and the Bourbons are hardier, and if they be killed to the ground, the buds below the surface will send up strong canes that will give the best of blooms. Whether canes be killed to the ground or not, they should be cut off close to the earth every spring. The soil can hardly be made too rich for this class of roses.

Before the ground freezes each fall, the earth should be drawn up around each plant in a little hill, and a heavy coat of manure applied. Then the entire bed should be covered thickly with evergreen boughs or a similar mulch. Hybrid perpetual roses should be carefully bent to the ground and covered with the same material. Persian Yellow and Harrison's Yellow are entirely hardy and need no protection. They should be pruned sparingly. But as these roses bloom better on new canes, it is well to have more than one plant and to prune each rather severely in alternate years, because these, especially the Persian, do not often throw up new canes as long as they have old wood upon which to grow flowers. Severe pruning induces new canes, and while it is growing, of course the plant does not produce so many blossoms. If one be setting roses this fall, he should remember that to set them near large trees is fatal, as they will be starved to death, the trees robbing them of their nourishment.

FORESTRY

LAWN TREES OF FAST GROWTH.

By T. W. Grover, B.A., Norwood, Ont.

THERE are now several nurseries near the principal cities of the Eastern States making a business of supplying large trees, twenty or thirty feet in height, for newly made premises, and all the nurserymen say the demand for large trees is increasing. Purchasers insist on immediate effect, and, generally, regardless of expense, want a tree that will cast a shadow on the lawn today rather than a seedling in which is only a hope of a tree some day in the future.

The forest planter, of course, is more concerned in securing a good seedling of any size and at a cost of money and trouble not too great to be calculated by the acre. A forest, containing the largest per centage of thrifty trees, is far more attractive than a single specimen of the greatest beauty when profit is considered in the planting.

The removal of these large trees is not difficult. The system of preserving a large ball of earth has been abandoned, and it is found that, properly transplanting just after the death of the leaf and before its fall, the large tree is not more trouble than smaller trees or more risk on our Canadian lawns. If we were paying five dollars each for trees, we would probably get discouraged if we found a percentage of loss, which we would not notice in trees at five dollars per hundred.

Without waiting for the time when we will have millionaire planters, we may have very handsome lawns by a little more pains taken with some of our fast-growing ordinary trees. No one but a nurseryman would believe the difference cultivation and care will make in the growth of any tree, or we would see more labor spent on nearly all our lawns.

The best known American tree fanciers who have laid out lawns, which are now of scientific interest, usually cultivate all the soil about their tree, or groups of trees, as well as thoroughly fertilize and mulch them just as much as a fruit grower.

The commonest tree we have, such as white ash, maple or spruce, will make more than ten times the growth when cared for properly than in a close sod or overrun with weeds. The size of the tree, as well as development of flowers and seeds or fruit, is directly dependent on the chance the tree has.

The small spruce, commonly sold by the hundred, will hardly live at all in a state of neglect, and it takes a large tree of any kind to hold its own in some places we see trees planted.

To secure trees on an entirely new lawn it should be well cultivated and underdrained as if for gardening or farming, and, after being well manured and free from weeds and being allowed to lie over all winter, it may

be planted with any size of trees found convenient. Grass seed or sod may be put where desired but not about the trees. Maple, ash, elm, basswood, box elder, walnut, larch, spruce and pine, of either native or imported varieties will develop rapidly.

For rapidity of growth only, it is likely the box elder will stand first, then the white elm and ash. In this climate the new wood on either may reach six or eight feet a year. A little further south the catalpa ailanthus and chestnut will equal or pass these. It will be easy in any locality to find trees which will soon grow to a conspicuous size. The time spent in fitting the ground before planting is more than gained both in smaller number of failures and in the more immediate growth of all. Forest trees resemble fruit trees and repay all the care, though in a different way.

Arboricultural.

The Judas Tree.

THE Judas Tree or Red-bud af the middle and Southern States (*Cercis Canadensis*) is in bloom. It is one of the most beautiful flowering trees of North American forests; and there are no more beautiful objects than the great masses of this tree in some parts of the South or South-west, notably along the eastern borders of the Indian Territory and in eastern Texas, when they are covered with their purple flowers in very early spring, There the Red-bud becomes a tall tree, with a stout trunk; further north, although nearly always arborescent, it never attains the size developed in the more favorable climate and more generous soil of the South. It is remarkable that so fine a plant should be neglected by our horticulturists, who hunt the remotest corners of the earth for novelties with which to embellish their gardens, and pass native species which cannot be matched anywhere. *Cercis Canadensis* is rarely planted in gardens these days, and yet a plant in flower standing out alone before a dark background of Hemlocks or of Pines, or where it can contrast its purple flowers with the white floral leaves (the two plants flower here together) of the Flowering Dogwood (*Cornus Florida*) is an object which fully satisfies the imagination, and one which is not easily forgotten. The Red-bud, although not a native of eastern New England is perfectly hardy here; it grows rapidly, and is an object of beauty from the time abundant flowers cover the naked branches until the late autumn, when the red-brown pods are ripe.--*Garden and Forest.*

Forest Trees for Ornamental Use.

THE autumn is an excellent time of the year to dig from the woods, and transplant on the grounds, specimens of our hardy forest trees; but do not make the mistake of too close planting, especially about the house. Maples are always fine, and to this we may add the Tulip Tree, Basswood, Elm and White Birch, Walnuts, Black and White, and Butternuts may be easily grown from seed, also Chestnuts. A grove may be quickly grown from Locust seed, and these trees, as well as the Basswood and Tulip Tree, are especially valuable as honey producers—*Orange County Farmer.*

The Trade in Bananas.

Few people have the faintest conception of the immensity of the trade in bananas, although it may be better understood by the statement of the fact that there are at present forty-seven steamers plying between the West India Islands and New York, engaged almost exclusively in the banana trade. The profits attached to this business have been enormous to the steamship owners, and a source of considerable revenue to importers and dealers. Large as is the production of bananas in the Islands, it is increasing rapidly, and the consumption on this continent appears to be keeping pace therewith. In Canada, this favorite fruit has become quite popular, and, where some years ago only a few bunches were required, it now takes car loads to satiate the demand. Prices vary considerably during the season, as the least scarcity causes them to advance to $1.75 to $2.50 per bunch, whilst an over supply brings them down to $1.00, but fair average figures for this market are $1.25 to $1.50 for good, sound red and yellow fruit. It must be borne in mind however that the great bulk of bananas imported into Canada is composed of second qualities, the first being reserved for New York, Boston, Philadelphia, and other American cities. An importer stated a few days since that it was a very rare occurrence that a straight car of firsts came to this city, but the average quality of bananas sold here it is claimed are equal in flavor to the firsts, although the bunches and fruit are scarcely as large.—*Trade Bulletin.*

Forest Tree Culture.

From Annual Address of President Elliot, of Minnesota Horticultural Society.

There is a very erroneous impression among young people, and many old ones, that governments ought to do all the planting in forest culture; they thinking that men's lives are too short for such work; also that the planting of trees, even if successful in growth, is a very uncertain investment to the planter. Life is very uncertain, as statistics inform us; not more so than a great many other things that we do. All prospective operations have clustering around them many uncertainties; but really, in what can a young man invest a few dollars that will give him so much real enjoyment in his old age, as the planting of a goodly number of useful and ornamental trees and shrubs? In your youth plant trees; in middle age plant trees; in old age plant trees, that they may spread their ample shade over your head when silvered with old age.

Intelligent, useful men are trying to solve the problem of reforestation of our continent. The work may not be done in this generation, but it will surely exercise the most thoughtful intellects of this land until it is accomplished. This great scheme has come to stay with the best free educators of our land. There will be discouragements and dark days for this enterprise, but it will end in either the government or private capital undertaking this great work.

Trees, like men, begin to show age and decay at the top; but men unlike trees, return to their second childhood, and if an active, useful, energetic man in youth, they never lose opportunity for doing or saying something as a source of pure enjoyment; and I would inquire what more impressive scene of unalloyed sacrifice, than this useful employment in planting trees in their declining years for future generations to admire; living monuments that shall long remain for our children to appreciate; silent reminders of thoughtful, industrious usefulness?

MANURES FOR THE ORCHARD AND GARDEN.

(Extract of Paper read before the Western New York Horticultural Society by Joseph Harris.

MANURE is a by-product. Its price is determined, not by the cost of production, but by competition among consumers. If stable manure were sold in Rochester for 10 cents a load, there would be just as much produced as if it sold for $2.00 a load.

This view of the subject seems to be overlooked. If gardeners, nurserymen and fruit growers would study the subject of the oft ridiculed "special fertilizers" I am confident they would soon be able to use them with great profit, and not be obliged to bid against each other for the by-product of the city stables.

As fruit producers we should study to grow those crops that people are willing to pay a good price for. And if we grow crops in which the carbo-hydrates, instead of being worth $30 per ton, are worth $100, or $200 or $300 or $500 or $1000 per ton, we should see to it that the plants have all the food, and especially all the nitrogen, that they want to produce a maximum growth. It will not pay, perhaps, to use nitrogen to grow carbo-hydrates in hay, corn, oats and wheat, but it will pay largely to use them to grow carbo-hydrates in apples, pears, peaches, strawberries and other fruits. But it should be understood that when we use manure for fruit trees we should see that the fruit trees get it. If we grow wheat, oats, potatoes, beets, strawberries and seeds among our peach, pear, and apple trees, we should have to furnish an excessive supply of nitrates before the fruit trees would get much of it. The greater portion would be absorbed by the annual crops and weeds, and it may well happen that a moderate dressing of manure would, by increasing the growth of the weeds, actually lessen the crop of fruit, for the reason that the greater the growth of the weeds the more water they evaporate and the drier would be the soil where the roots of fruit trees are searching for food and water.

As vegetables and fruits are improved, they require richer land, just as improved herds of animals require richer food. I do not call grass and hay rich foods; neither are phosphoric acid, potash, soda, lime, magnesia and other ash constituents rich food for plants. They are absolutely indispensable, but in addition to these we must have a liberal supply of nitrogen. It is nitrogen that makes rich land. Of the three most costly ingredients of plant food, nitrogen, phosphoric acid, and potash, nitrogen is the only one that can be evaporated or washed out of the soil, and it is only in the form of *nitrates* that nitrogen can be washed out of the soil. And there seems good reason to believe that it is only in the form of nitrates that nitrogen is taken up by ordinary plants.

One thing is certain, our orchards need more nitrates, or, as we used to say, more available nitrogen. If we can get nitrogen, it is a comparatively cheap and easy matter to get phosphoric acid, potash, etc. The cheapest source of nitrogen is the organic matter in the soil, and this is derived from a previous vegetable growth, possibly some of it thousands of years ago and some of it only last year. The more recent the growth the more readily it is changed into nitrates. It is only within the last dozen years that we know how the nitrogen of organic matter was converted into nitrates and thus rendered available food for plants. The change is effected by a minute plant, or what would popularly be called a fungus. The essential conditions for its growth are air, a moderate temperature, moisture and lime, potash or soda.

Stagnant water, by excluding air,

stops its growth ; so does a reduction of temperature to near freezing and dry soil. A drained soil, well tilled and repeatedly exposed to the air, with the necessary moisture and a temperature ranging from 50 to 100 degrees are highly favorable to its growth. This is a far cheaper way of getting nitrates than sending to South America for nitrate of soda. If the matted sod in orchards was plowed, harrowed and cultivated and exposed to the air, as soon as the soil got warm these nitrate-producing plants would grow and produce nitrates for the growing plants, and if there were no growing crops or weeds on the land, the trees would get the nitrates. If you let them, the crops and the weeds will take up the nitrates. You can convert nitrates into carbo-hydrates in the form of weeds that pay nothing, or into carbo-hydrates in the form of grass or grain that pays a little, or into carbo-hydrates in the form of fruit or garden truck that is worth four or five, or ten, or twenty times as much as in the form of grain ; or you may convert it into a block of nursery stock that is popularly supposed to be worth a king's ransom. If we put on half the quantity of ordinary manure, and sow broadcast 200 lbs. of nitrate of soda per acre in addition, this will be fully equivalent to a good dressing of the very richest of compost, and a good deal cheaper. I say nitrate of soda, because it is not only a cheaper source of nitrogen than sulphate of ammonia or the organic nitrogen in our different fertilizers, but the nitrogen is in just the condition necessary for absorption by the plants. I have used it with great advantage on peaches, strawberries, roses, currants, raspberries, asparagus, celery, plants, potatoes, onions, beets, and nearly all garden crops. For several years we could not raise peaches ; the leaves curled up and turned yellow in June, and frequently fell off, and in a year or two the tree was dead. For two years the trees that have had nitrates have shown little or no symptoms of the disease—if disease it is. The leaves have that dark green luxuriant color that is the characteristic effect of liberal manuring, and better than all we had fine crops of peaches.

But will not nitrate produce a spongy growth with immature buds, easily killed in the winter ? I think nitrate of soda *sown early in the spring* has precisely the opposite effects. Nitrate applied early in the spring are taken up by the peach trees in May and June, or at the very time that the trees usually show signs of a lack of vigor. Late in the summer or early fall, little or no nitrate of soda would be left, and consequently would produce no late spongy growth of wood. It is true that peaches could be grown forty years ago where they do not now flourish. May it not be that the organic matter in the new soil held more water, and consequently furnished the peach trees nitrates early in the spring, and that what our peach trees need to make them as healthy and productive as formerly, is a liberal supply of nitrates *early in the spring ?* And a market gardener, instead of using such excessive quantities of manure for the purpose of getting nitrates for his early crops, might well try if a direct application of 400 or 500 pounds of nitrate of soda, with a small dressing of manure, would not be at least effective, and far cheaper.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

THE FENCE.—The *American Garden* is entering upon a crusade against the superfluous fence. We heartily coincide with our able contemporary in this matter, believing that fences are the greatest blot upon our landscape from an æsthetic standpoint, and that the enormous expenditure at which they are kept up are an unnecessary tax upon the already heavily burdened farmer. Could the principle once become established that cattle are to be fenced in by their owners, and not fenced out by the neighbors, a great relief would be experienced by the majority of those interested. The idea, however, is not at all new to us in Ontario, as by consulting our Report for the year 1886, page 11, it will be seen that this very thing was subject of discussion at one of our winter meetings, and the fence denounced as a nuisance that ought to be done away with, except where required to enclose one's own stock.

APPLE SCAB.—Mr. B. T. Galloway, chief of the Section of Mycology, of the Department of Agriculture, Washington, writes to the N.R.Y., on this fungus, drawing attention to several important facts respecting it. The young spores are very minute, about 1-1500th of an inch in diameter! and live over winter on the young twigs, old leaves and fruit. They begin germinating about the time the young fruit is forming, and under favorable conditions, such as plenty of heat and moisture, they develop very rapidly. At first it is only by the closest inspection that the tiny specks can be discerned, but soon become plainly recognizable. If numerous, as during the present season, they cause the fruit to grow misshapen, and very small, utterly unfitting it for market. One point not generally known is that the spot continues to grow even after the fruit is gathered and stored away in the barrels for the winter.

The raking together and the burning of the affected leaves and fruit in the fall may be useful, but in an orchard of any size is almost impracticable. In our 100 acre orchard, for instance, almost every kind is, this year, more or less affected, even the Golden Sweet, which we had hitherto counted as proof against this fungus; what a task then would be the gather-

ing and burning of all affected leaves and fruit! The spraying with a fungicide is, however, hopeful, and we hope Mr. Galloway's remedy may prove effectual. It is a solution made by dissolving one half an ounce of sulphurate of potassium (liver of sulphur) to a gallon of water and he claims that this will be found as cheap, practicable and efficacious as any. The first application should be made when the fruit is about the size of peas, taking care to spray thoroughly. The spraying to be effectual, should be repeated about five or six times, in intervals of about two weeks between each.

Last year there was so very little scab, even upon the Early Harvest, that we were thrown off guard and omitted the application of any remedy, but this year, under the favorable conditions of long-continued heat and moisture, it has returned with redoubled violence and will utterly destroy a large part of the already very light apple crop. We urge upon all our readers the importance of giving a thorough trial to the proposed remedies in order that, if possible, this terrible scourge may be driven away.

The Erie Blackberry.—On page 76 of Vol. 10, of this journal, some reference was made to this new blackberry as being as large as the Kittatinny, almost early as the Early Harvest, as vigorous and as hardy as the Snyder, free from rust, and of the best quality.

We have this berry fruiting now on Maplehurst Fruit Farm, and find that, on the whole, it bears out the claims made for it. The Kittatinny is only just beginning to ripen freely, (Aug. 8th), and almost the whole of the berries on the Erie are ripe, so that evidently it would be very desirable as an early berry to precede the Kittalinny. It is a vigorous grower and in this respect a great contrast to the Early Harvest, which is a poor grower. In size it would average nearly as large as the Kittatinny, and rounder in shape. It is a little firmer than the latter, and on this account would be better shipped, but has not the hard core of the Lawton. The weak point about it appears to be that it is not more hardy tha nthe Kittatinny, and therefore we fear it cannot be recommended for our colder sections.

Heavy Reclamations.—The *Trade Bulletin* of Montreal, in its issue of July 12th, states that very heavy reclamations are being made by English houses upon Canadian shippers and farmers, on apple shipments of last year which have turned out disastrously. Several of these claims are said to be so large as to ruin the persons making the shipments, and they are being placed in the hands of proper parties for collection. The total amount of these claims amounts to between $50,000 and $75,000, showing how very disastrous were most of the apple shipments of last season, when the fruit lacked all this of paying even the freight charges. The *Trade Bulletin*, writing in the interest of the trade, of course, uses all this to point out the evil results to Canadian growers of attempting to ship their own fruit direct to English houses. Now, while on acconnt of ignorance of the standing of houses so far away, and of proper methods of packing, etc., this advice may be wise for all small growers to follow, yet for large growers we consider it is the height of folly to pay charges to two commission houses, one in Montreal and one in England. Of course it is very important to make a connection with some *reliable* English house, but is not this just as important in shipping to a Montreal house? We have ourselves had the misfortune to lose money with Canadian commission men even, so that there is need of caution even in honest Canada.

It is our aim to introduce to our

Canadian growers, through our advertising columns, some reliable apple merchants both in Montreal and in England, and thus put our readers in the way of placing their apples in the best possible hands. At the same time we would advise all small growers to sell their fruit at home at any fair price, rather than to try the doubtful chance of consignments to a distant market.

THE ENGLISH WOODBINE.—The *Garden and Forest* speaks as follows regarding this climber: "It is surprising that the English Woodbine (*Lonicera Periclymenium*) is not more generally grown in the gardens of this country. It is one of the most beautiful of all the climbing honeysuckles—a perfectly hardy plant, and the delicious fragrance of the flowers is unequalled. The flowers are pale-red externally with yellow throats, and are produced from the ends of the branches in closely sessile heads which are stalked above the upper pairs of leaves, which are closely sessile though not united. This is a widely distributed plant, from Scandinavia to the shores of the Mediterranean." The "Dutch Monthly" is a variety of this plant, so named, it is said, because it originated in one of the Dutch nurseries. The flowers are rather darker than those of the species. These honeysuckles flower quite continuously during the summer months, and there are no more charming plants to train over the porch or verandah of a dwelling house, that the fragrance of their flowers may be enjoyed constantly.

THE GRAPE CROP along the Hudson river, according to the New York *Herald*, has been thinned out at least one half by the unusually heavy rains that fell about the beginning of last month. Even the Concords were shelled off to the ground like snowflakes. Truck gardeners complain of very heavy losses, as well as farmers generally. Strange that such heavy and continuous rains should have fallen in Eastern New York State and along the coast of New Jersey, and that we in Ontario should be suffering from such a long continued drouth, that our raspberry crop was cut short and our crop of Kittatinny blackberries are dried up completely on heavy ground. These circumstances, following the frost of May 29th, have resulted in high prices for all small fruits; and the prospects are that those vineyards escaping the mildew, the frost and other calamities, will bring their owners satisfactory returns.

QUESTION DRAWER

The Yellows.

70. THE last two years the peaches on one of my peach trees have grown to the size of marbles and then stopped growing altogether, and of course never ripened. Can you tell me the cause, and also the cure if any?—W. W. R, *Toronto.*

We think your tree must be affected with the yellows, which often shows itself by the symptoms which you mention. The disease is usually recognized by (1) the premature ripening of the fruit. Sometimes this occurs on a single limb only, but, within a year or so, it affects all parts of the tree. (2) The next mark is the singular color of the fruit when ripe, it being mottled and dotted exteriorly with red, and on the inside the flesh is also streaked with red; while that about the stone is wholly dyed that color. (3) The third mark is the growth of summer shoots of a dwarfed and feeble appearance; and

the following year of curious tufts of sickly-looking leaves. In the course of two or three years the tree usually dies. Other diseases may somewhat similate the yellows, as, *e.g.*, the effects of the peach-tree borer in the root; the presence of the root aphis; or the yellowish look of the foliage of trees growing upon a wet sub-soil. There is no established cure for the yellows. Some Massachusetts peach grower claims to have effected a cure by the use of muriate of potash, in cases where the disease had not gone too far. We have found in our own orchard much benefit from the liberal use of unleached wood ashes applied broadcast under the trees. We cannot see that any cases have been positively cured, but certainly a wonderful thrift has been imparted to the whole orchard, and we venture to say there is not a healthier nor thriftier peach orchard in the Niagara district.

The Early Green—A Seedling Plum.

71. I SEND you for your inspection my seedling plum "Early Green," which, considering its size, fair quality, and in particular *its early season* (*1st Aug.*) *of ripening*, I think may prove worthy of cultivation. Hoping you may receive the box in good order.—W. HOLTON, *Hamilton.*

FIG. 65—OUTLINE SKETCH OF THE EARLY GREEN.

This is a delicious plum of most excellent quality, of medium size, roundish in form, with a delicate skin marbled in two shades of green; the pit is small and free. The stem is delicate and about ¾ of an inch long. In our opinion it is well worth disseminating and other points proving favorable, it will take a prominent place among our market varieties. We have prepared an outline drawing from one of these specimens which fairly represents its form.

Robson's Prune.

72. YOURS of the 31st ult. to hand, *re* seedling prune. Only having two prunes left I am pleased to forward you one by to day's mail. The tree is bearing well this season and I shall be ready and willing to send you a sample in the fall if approved. If this plum has any merit in your estimation kindly let me know, and you will oblige.—W. M. ROBSON.

The quality of this prune is excellent, and in a good state of preservation. We hope to see more of it in order to form a more correct opinion of its value.

Cultivation of the Apple Orchard.

73. I HAVE an orchard that is from fourteen to fifteen years old and it has always been under cultivation. I am told that you never plough but let your orchards alone for years, using a top dressing of manure and wood ashes. I saw in the report that Mr. Dempsey cultivates his orchard and grows potatoes or corn. Would you please either send me an article on the subject or write me what you think. How much manure and wood ashes do you use per tree? I have great confidence in what you say as I have heard so much of the success you have in fruit growing. An early reply will greatly oblige.—J. FUNNEL, SR.

It is a mistake to say that we do not cultivate our orchards; we cultivate thoroughly for the first ten or fifteen years until the orchard is well established, and then seed down to clover; leaving it in that shape only so long as the trees show a thrifty growth, and when they begin to show any lack of vigor we at once work up the whole ground. The better cultivation and care of the apple orchard is one of the points which we believe our representatives at Farmer's Institutes should press most emphatically upon the attention of the farmers. We do not mean by cultivation simply the growing of some other crop in the orchard, though this may sometimes be done to advantage; but the particular cultiva-

tion of the trees themselves, as if they were, as indeed they should be, esteemed the most important vegetation occupying the ground. Nor do we mean ploughing deep furrows between the rows of trees and leaving the rows themselves in sod, to extract the strength and moisture from the soil, but a working up of the whole field, and the clearing away of all the grass and weeds from about the trees. What would be thought of any farmer who would treat a corn crop as he often does his apple trees, and leave the sod along the rows or about each hill; and yet that kind of cultivation is counted all right by many persons in the apple orchard. Great care must be taken, however, to plough shallow furrows, or great damage will be done to the roots of the trees. Cultivation exposes the elements of fertility, which are already in the soil, to the action of the air; by which they are rendered soluble, so that they can be taken up by the roots for the benefit of the tree. Cultivation also, if kept up during the heat of the summer, serves to keep the ground in a moist condition, and thus bring about a large growth of the fruit. With regard to the use of manure and ashes, we are convinced that herein lies the secret of the successful orchard and fruit garden. Potash enters largely into the composition of the wood as well as of the fruit of our orchard trees, and it is astonishing what an effect is brought about by its use. The writer has been in the habit of applying about a thousand bushels each year to his orchard, applying about a bushel every second or third year to those of bearing age. This, in addition to thorough tillage, has brought about wonderful results in the vigor and fruitfulness of the trees. It is difficult to get a sufficient quantity of barnyard manure to spare much of it for the orchard; but where it can be obtained it should be applied, as well as the ashes.

Aloe and Agave.

74. I HAVE a nice little specimen among my house plants of what is commonly known as Devil's Tongue, as well as one of the variegated Indian Aloe. Please inform me in your next issue what is the technical name of the former, and if it is of the same species as the *Aloe*, also what is the proper cultivation of both; also the proper soil for Ice and Dew Plants and others of a succulent nature which are not of the Cactus tribe. I am very much interested in the great improvement of your journal.—R. H. LIGHT, *Kingston, July 10th.*

Reply by N. Robertson, Supt. Govt., Grounds, Ottawa.

ALOE VARIEGATA is the botanical name of the variegated aloe. I am glad you bring this matter up, because much confusion exists amongst amateurs over the Aloe and Agave, classing them together. Now they are two distinct orders; the Aloe belongs to the Lily order whilst the Agave belongs to the Amaryllis tribe. The Aloe flowers every year, producing long spikes of tube-shaped flowers, and every part of it may be said to be a purgative. The variety Socotrina is the variety from which the medicine called Bitter Aloes is taken. They are natives of the Island of Socotra. When grown as house plants they should be potted in light sandy soil, as it will bring out the flowers, in better color; but when larger specimens are wanted a stronger soil may be given. They are plants of easy cultivation, but, like all classes of succulent plants, must have perfect drainage. They will not stand sour soil. They are propagated easily by the numerous offsets they throw out.

The AGAVE is called the Century Plant because it was said to only flower once in a hundred years, but it will flower in twelve or fifteen years, and then it exhausts itself and dies. It is a native of South America.

By DEW PLANT, I think you refer to *Mesymbryanthemum Crystallinum*, but there are several hundred varieties of them. It is also called Ice Plant, as leaf and stems are covered

over with small watery pustules that appear as fragments of ice. A light soil, with full exposure to sun, is all they require. There are annual and perennial varieties of them.

Hardy Irises.

75. CAN you tell me in the next issue of the HORTICULTURIST what variety of Iris would stand this climate?—*Levi F. Selleck, Morrisburg.*

Reply by N. Robertson, Ottawa.

Of the Iris there are three distinct kinds, but many hybrid species have been introduced. So far as I have seen, all are hardy. The bulbous varieties should be taken up every second year and replanted, as the formation of new bulbs is always downward, and if this is not done the bulbs get too far down and soon die out. This has been frequently attributed to frost killing them, they are all the better of a transplant after several years. Light sandy soil is what they prefer.

Apple for Name.

To the Secretary F. G. A. of Ontario.

SIR,—I forward you by mail an apple. If you could inform me of its right name through the CANADIAN HORTICULTURIST, you will oblige. It has grown on a young tree that was planted about five years ago. I have two more trees of the same variety which appear to be early and good bearers. The trees were without labels when I came on the place three years ago. I may have others to name.—G. PEDRICK, *Walkerville.*

The apple you have is a fine specimen of the Duchess of Oldenburg which was illustrated with a colored plate in the May No. of this Journal. We shall be glad to name any samples of fruit you may send unless they are either local kinds, or varieties little known.

OPEN LETTERS

Pruning Blighted Pear Trees.

SIR,—We have just finished cutting off and burning about ten loads of blighted pear brush. We sawed the limbs off, about two inches below any appearance of the disease, and gave the remaining limbs a coating with raw linseed oil, applied with a paint brush. A few years ago the pear trees blighted badly and we gave them the above treatment two or three times and saved our trees. Ten days ago I was sawing off the blighted limbs, and the limb that supported the ladder snapped off and I fell heavily to the ground, breaking my left arm below the shoulder, with a very severe shaking up.—J. K. MCMICHAEL, *Waterford, Aug. 9, 1889.*

Fruit Crops in East Simcoe.

SIR,—I have about 200 seedling apple trees and 100 grafted trees, and I can count only four apples on the whole lot. About fifty of the trees have been planted from six to ten years. The frost has done its share for me this year, and left me no fruit to speak about. The Russian Mulberry has not been able to make a bud since, but the Russian Apricots stood it all right. The Princess Louise apple is doing well so far. I have taken a great fancy to Simon's Plum, would like to try it very much. I am very well pleased with the CANADIAN HORTICULTURIST, and herewith send one dollar for my renewal.—T. A. GRATIX, *Coldwater, Ont., July 26, 1889.*

Ottawa Gardeners' Club.

SIR,—I promised you some details of the subjects taken up by the Gardeners' and Florists' Club we have established here. The one of "Whether it is desirable in planting trees to cut away the Branches and Leaders" is not finished after three nights on it. We have now appointed three men to examine into the systems of tree planting and report at our next meeting; so far the pole system receives the greatest support. I will give you a summary of the whole when finished. It has been most interesting, and brought out some unthought-of features. "Which variety of Tomato is the best for general market purposes" was

discussed. Opinions varied; Livingstone's Perfection was preferred by one, Bailey's Improved by another, and Canada Victor by still another. —N. ROBERTSON, *Ottawa, July 19, 1889.*

Caution about Paris Green.

SIR,—While admitting the great help of the CANADIAN HORTICULTURIST to fruit growers, I think it would be a power for more good if your subscribers would only tell of their failures as well as their successes. Now Paris green for the destruction of insects has proven a failure with me, inasmuch as it kills the leaves and fruit also. Of course it was too strong, but I only used a little over half the amount recommended—a little over half a teaspoonful to a pail of water. Where it touched a leaf a hole was burned through, and where it came in contact with a stem the leaf or fruit gradually died. My firm belief is that Paris green, being indissoluble in water, will burn anything it comes it contact with, whether much or little water accompanies the particles. Three years ago I sprayed my plum trees with tobacco water and had an excellent crop. Last year I did not use anything and I had no crop, while this year Paris green has been of no use. Possibly it was not ground fine enough. The difficulty of getting tobacco for the purpose may be a difficulty to many, but the plant can be grown successfully in Ontario, and when once dried will keep for an indefinite period. It is perfectly harmless and will kill most all kinds of insects, besides being a benefit to plants.—WM. LINDSAY, *London, Ont.*

NOTE BY EDITOR.—Half a teaspoonful is plenty of Paris green to an ordinary pint of water for apple foliage, and is possibly too strong for the plum. Another point is in applying the spray, as by continuing too long in a place, an over dose would be given.

Ben Davis Spotting—Low Prices—American Fruit.

SIR,—I must take back what I said about the Ben Davis being free from spot. They became spotted a little later in the season than some other varieties. This has been a season to promote fungus growth on anything in our section. We have potato blight, onion blight, cauliflower blight, oats rusting, beans and apples spotted, and a severe hail storm besides. One gardener told me it would cost him $100 for hot-bed glass to repair damages caused by the hail. If we only had remunerative prices for what we do sell, it would help, but after being at great expense forcing early vegetables we found American truck almost glutting our market. Last week we were getting good prices for our tomatoes, but five car loads came in from the States in a couple of days' time and knocked the bottom out of the tomato market. We used to get fancy prices for our Harvest apples, but American apples are selling for $2.50 per barrel and less. The market gardeners are discouraged, especially those with high rents. One of our most successful gardeners told me at the very least he would be $1,500 out of pocket with poor crops and poor market on account of American competition; they get the cream and we get the skim milk, and pretty well watered at that.—R. BRODIE, *St. Henry of Montreal, Aug. 15, 1889.*

Fruit in Huron County.

EFFECTS OF FLOOD, FROST AND BLIGHT.

SIR.—We had a regular little flood here on the 1st July, and again on the 3rd of August, that did us a good deal of harm. We had just got our corn hoed and replanted after losing so much from the previous wet weather, when this storm washed a lot of it out and away. We had a hard job of it in hoeing as the ground was so hard and packed that we could scarcely pick it up, and our potatoes were, a lot of them, drowned out so that our crops will be very light.

Since I last wrote you on the 29th of May, regarding the frost, we had a great deal of cold wet weather that destroyed a great deal of our crops, such as corn, potatoes, peas, beans, etc.,—the seed rotted in the ground—at that time I did not know to what extent the damage was caused by the frost; the apples were nearly all destroyed; my favorite apple, the Ribston Pippins, was beautifully clothed in bloom, but now perfectly naked of fruit. The only apples that escaped all are the Northern Spy, the large Alexander and the Snow. On those trees there appears to be nearly half a crop. I expect to get one barrel to where I got forty last year. Apples are wormy. All the best cherries were killed; the common ones such as the Kentish not much hurt. Plums are scarce, and pears very much damaged. I find the Flemish Beauty and Manning's Elizabeth stood it the best. Duchess are all gone, and what there is of both pears and apples are poor specimens. Our strawberries were not more than quarter of a crop; grapes, of course, in the open ground all gone; currants and gooseberries a very good crop, those on top of bushes were frozen, but they were mostly good; raspberries were not half a crop, and the flavor very poor. The Cuthbert, generally so delicious, was not fit to eat, scarcely, and the canes seemed to dry up. The Shaffer seemed to be very fair, but the best of all was the Golden Queen. It is a noble berry. I sowed a large quantity of choice garden peas but the continual rain rotted nearly all of them, as well as my beans, and now lately the pear blight has been very bad. I kept cutting off all small branches, but I hated to disfigure and mutilate the trees so I put on linseed oil which seemed to stop the blight from going

down any further, and I pulled off all the blighted leaves, but I see it is gone up and the leaves are turned black above. I hardly think the blighted branches will survive, as the bark seemed to be blistered and turned black and withered.

The Flemish Beauty seems to be most affected ; there is a little on the Bartlett and Manning's Elizabeth.

The bark on the stock of my standard pear tree for some years seemed to have died and rotted on the south-west side. What could have been the cause of it ?

Our grain crops are mostly good. The grain aphis was rather bad in the fall wheat, and the midge in the bald varieties of spring wheat. On low land the peas are not very good.

My son, S. E. Hick, of Paris, was at Grimsby Park last week, and in writing to me he described a berry that is growing wild on the side of the mountain, and asked me if I knew what it was. He says it is something like a red raspberry, the blossom something like the Sweet Briar, and leaves similar to a grape. What is the plant ?

I see the English sparrow is getting more numerous. They are pretty thick in the wheat fields.—WALTER HICK, *Goderich, Aug. 17, 1889.*

NOTE BY EDITOR.—The plant described so clearly by your son is the Purple-Flowering raspberry (*Rubus odoratus*), and is very common in the Niagara district.]

Representatives from Michigan.

SIR,—The annual meeting of our society is fixed by our constitution for the week preceding your winter meeting at Windsor ; (1st Wednesday in December), and I reckon confidently on the appointment at that time, of a strong delegation to represent our society at your gathering.—T. T. LYON, *President, South Haven, Mich.. Aug. 19, 1889.*

Fruit in New Brunswick.

SIR,—I have had fine crops from Fay's Prolific Currant. Moore's Early Grape does not ripen with me. The apple crop in New Brunswick is extremely light. A great many trees have died or are nearly gone, and this summer's drought will also diminish the number of barrels of fruit. The late spring frost destroyed the huckleberry blossoms, and raspberry bushes died for want of rain, but gooseberries were a fair crop. Plums very scarce.—N. BURPEE, *Sheffield Academy, N. B., Aug. 14, 1889.*

The Juneberry.

SIR,—In the August number of your magazine, I notice mention made of the Juneberry. This fruit attracted my attention in 1873, and by good fortune I happened to secure a few plants from a friend and neighbor in Kansas, who had brought his old plants from Illinois. The plants from Illinois were originally taken from the woods in the mountains of Pennsylvania. This is the correct history of the variety which I named and introduced as "Success" about ten years ago. Mr. J. T. Lovett, of Little Silver, New Jersey, and several others have been buying plants from me for several years past. This year I have sold to Mr. Lovett my entire stock, (except a few plants kept for the fruit, on my farm near Geneva, Kansas. This variety is dwarf in its habits of growth, but the berries are very large and delicious. They are in my opinion, the best I have ever seen. Other varieties procured from other sources have all proven of less value every way. You are quite mistaken in saying that the fruit can be propagated by cuttings ; at least they have invariably failed with me. There is no doubt that plants could be propagated by grafting, but the only practical way which I have found, is to take up the suckers from around the old bearing plants. All attempts to cultivate the species of Amelanchier, which is commonly found in our forest as a small tree have not resulted profitably, but the dwarf kinds are generally prized very highly.—H. E. VAN DEMAN, *Pomologist, Division of Pomology, Washington, D.C., Aug. 17, 1889.*

NOTE BY EDITOR.—In England the method of propagating the Juneberry and other trees by cuttings is frequently employed with success, though of course cuttings of any kind will succeed much more easily in that moist climate than with us.

OUR FRUIT MARKETS.

The Prospect for Apple Growers.

IF the quantity of apples in our orchards in Ontario is small and the quality poor, there is, at least, some satisfaction in the prospect of good prices ; and after the sad experience of last year we shall consider it in no way unfair to take from consumers as

much as $2.50 per bbl. for winter fruit, f.o.b. Indeed only last week, we had summer apples sold in Montreal at that figure, an unusual thing nowadays and which indicates a hungry market.

The fact is, apples are a very short crop. NEW YORK STATE is one of the most important apple-growing States in the Union, and the prospect is that it will not give 75 per cent. of an average yield. ONTARIO probably has not 50 per cent. of an average, even when we include in our calculation the fact that in the Erie sections, between Niagara and Windsor, there is a fair hang of fruit in a good many orchards. MICHIGAN promises a yield which will run below the average, and Ohio a very light crop. Aside, therefore, from the impulse of a foreign demand the prospect is that our apples will all be required for our home supply, and that at constantly increasing prices, unless some other fruits fill the gap.

From our foreign reports we gather that there will be a lively foreign demand for apples also, as the crop in ENGLAND and on the CONTINENT is much below the average. We hesitate to speak encouragingly to our readers concerning the apple market, after the misfortunes of last year; yet the conditions are different, for while what we said about the English supply was true, the unprecedented quantities sent over from America exceeded the requirements about one-half.

It will not, however, be necessary for us to ship to England to get good prices this year, as we shall be able to command them at our own doors, without risk.

Philadelphia.

SIR,—Apples; choice stock scarce and wanted, $2.75 to $3.00 bbl. for Blush; $2.25 and $2.50 for Alex.; 20 oz., Grav. etc. Peaches, light supply and firm, $1.50 to $2.00 per basket for choice, down to 50cts. and 75cts. for seconds and common stock. Pears, choice large bright stock wanted, $6.00 to $7.00 bbl., but inferior and dull $3.00 to $5.00 bbl., as to quality. Plums and grapes increasing in demand with improving quality. Plums, 50cts. to $1.00 per 10 lb. baskets. Concord grapes 50cts. to 60cts.; Delaware, 70cts. to 80cts.; Ives, 25cts. to 35cts. per 10 lb. basket.—PANCOAST & GRIFFITHS, Wholesale Fruit Merchant, *Aug. 15, 1889.*

SIR,—Southern fruit being done and our *local crop being short* and *poor in quality*, gives us at present a *good fruit market.* We think we can please you on car lots of apples and pears; "Maiden Blush" are a favorite apple here, and command $2.50 to 3.50 bbl. as to quality, choice stock scarce and wanted, at outside prices. Bartlett pears $4.00 to $6.00 bbl., as to quality and condition, very little choice stock here.—PANCOAST & GRIFFITHS.

Mont eal.

SIR,—The market this week is quiet on all lines. Apples; several cars good Southern apples have sold from $2.00 to $2.25, and one car Canadian Astrachans at $2.00, while some extra lots of Astrachans and Duchess brought $3.00 per barrel. For good summer fall apples, the outlook is very good, and we can use a great many. Pears, good Hudson River Bartletts have sold fast from $2.75 to $3.00 per keg, and $6.00 to $8.00 per barrel. But smoky are a glut in the market and almost unsaleable. Canadian basket pears have sold from 50cts. to $1.00 per basket as to quality. Peaches, in fair demand, good basket stock, $1.25 to $2.00 per basket; common, $1.00 to $1.25. Grapes, not many in yet. Selling 80cts. to $1.00 per basket. Plums, scarce and wanted.—VIPOND, MCBRIDE & CO., *Aug. 14, 1889.*

London, England.

IN reviewing the business of the past season we regret we cannot refer to it with satisfaction. The unprecedented quantities of apples that were shipped from the United States and Canada to this country had a disastrous effect upon prices, which ruled exceedingly low during the greater part of the season. We may say that last season's supplies exceeded requirements by about half. The prospects for the coming season are of an encouraging character. From accounts received the apple crop in this country promises to be very small, and similar reports have come to hand of the French and Continental crops generally. We think there will be a good opening for American and Canadian apples during the coming season; fall fruit particularly, we think, if at all good, will meet with a good demand; but shipments of this class are only to be recommended when condition is likely to stand the voyage.—VAN OS & CO.

Covent Garden, London, England.

IN view of the early resumption of apple shipments, I have again the pleasure of submitting for your information particulars of the apple crop prospects this season in Great

Britain and the Continent. Your perusal of the various independent reports from the most reliable sources at my command, added to a wide personal survey, will, I trust, aid you in forming some idea as to the conditions under which shipments of apples from the United States, Canada, and Nova Scotia will arrive here.

United Kingdom.—The period of prolonged drought during the greater portion of the early Spring and early Summer, combined with a general attack of caterpillars, have, in the Southern Counties of England, nearly destroyed the apple crop, which has suffered more than any other fruit in the orchards; in the Midlands result are not quite so discouraging, the yield, however, is much under the average; in the Northern Counties, though showing fairer results, the cultivation of the apple is merely nominal, and can have no appreciable effect on the imported fruit.

Holland.—Like the Southern Counties of England the fruit has suffered largely from the drought, and the yield in the most favored parts is reported about half a crop compared with 1888.

France.—The Northern and Western Districts report about half a crop, mostly common sorts. In the South and South-West the yield will be very small; the quantity of fallings is reported very heavy nearly all over the country.

Belgium.—The reports are more encouraging, and late varieties showing an average yield.

Germany.—The North estimates a fair average crop. From the South the report is about half a crop.

Spain and Portugal.—Crops reported light, prices are therefore high, but arrivals commence early in July and in September; arrivals after that have no influence in the English markets.

The conclusion which may be fairly anticipated is that our wants will be quite equal to that of last year, which, with shortened supplies and better fruit—as we are led to expect from your side, this season—must tend to better nett results for shippers.—J. B. THOMAS, *Aug. 1889.*

Dried and Evaporated Apples.

THE prospects of a short crop of apples for 1889, has already had the effect of stiffening prices for the supply of dried apples left over from last year, sales having been recently made at 4c. to 5c. per. lb., although at one time they sold as low as 3c. Evaporated apples have likewise been held with much greater confidence, prices having advanced from 5c. per lb. to 6c. @ 7c. There can be no question that the present apple crop will be very much less than that of 1888, and considerably short of an average yield, and consequently new supplies of dried and evaporated will, it is expected, be very light, for the reason that prices even at the late advance will not induce production, as growers are expecting to obtain prices for the green fruit which will pay them better than preparing the dried and evaporated products.—*Montreal Trade Bulletin.*

THE GLASGOW MARKET.—While this number was going through the press the following report of sales of apples in Glasgow by Messrs. James Lindsay & Son was received, viz.: Cranberry Pippins, 22 to 23; Nonesuch, 15 to 16, Kings, 23 to 24. Reports from all over Great Britain, as well as from the continent of Europe, agree that the crop will be small, and under the circumstances American apples, *in good condition*, should do well.

OUR BOOK TABLE.

THE DOMINION ILLUSTRATED for August 3rd is up to the usual high mark. The Wimbledon Team comes in for due attention, and the fine portraits of the members will be appreciated. St. John, N.B., and British Columbia have a large share in the remaining illustrations. The grasshopper hunt in Algiers will recall the shudders of some years ago to Manitoban farmers. Altogether, a good number.

THE ANNUAL REPORT OF THE BUREAU OF INDUSTRIES FOR THE YEAR 1888. PARTS I, II, and III. A. Blue, Sec., Toronto, Ont This report is an exceedingly valuable one to the farmers of Ontario, and shows a great amount of careful work in preparing approved, correct estimates of the various farm crops, values of farm property, farm wages etc.,etc., but it is very incomplete regarding the progress of Horticultural industry in our Province. Out of 177 pages of matter, only seven are devoted to the Orchard and Garden, and while careful estimates are made of the various farm crops such as wheat, rye, oats, beans, etc., giving in detail the acres, the bushels, the bushels per acre, etc., for each county; and in addition the totals for the Province. Now this is the very report we which need concerning the fruit industry. We have at present no means of knowing, for example, how many barrels of apples are produced in a given year in any county of our Province, nor the increase in the yield during the last decade. The report should give us full statistical tables showing the barrels of apples, the pounds of grapes, the baskets of peaches, etc., together with the acreage devoted to each, in each county. We have been frequently asked for the value of the fruit industry in our section, but in the absence of any reliable statistics it was impossible to give any definite answer. We hope the Government will give favorable consideration to our interests in this matter, and that a larger space will be devoted to Horticultural Statistics.

Original Poetry.

"FORGET ME NOT."

BONNY wee flower wi' gouden ee,
Blinkin' sae blithe and daintylie,
You surely ken, ye're dear to me

Dearer to me than a' the rest;
Sae I'll kiss ye, and place ye on my breast
And tell ye why, I loe ye best.

Altho' you are but a tiny flower
O'er my auld heart your mystic power
Cheers me in my twilight hour.

My wayward memory travels back
Three score years on life's rough track
To youth and happiness and *Jack*.

A glow of girlhood, I ween,
Steals o'er me, as in love's young dream
When he crown'd me with a diadem

Of these sweet flowers of sunny hue,
Forget-me-nots of azure blue;
Emblems of his love so true.

Ah! then my heart beat double measure
When roaming with my God-given treasure,
Hand and soul were linked together.

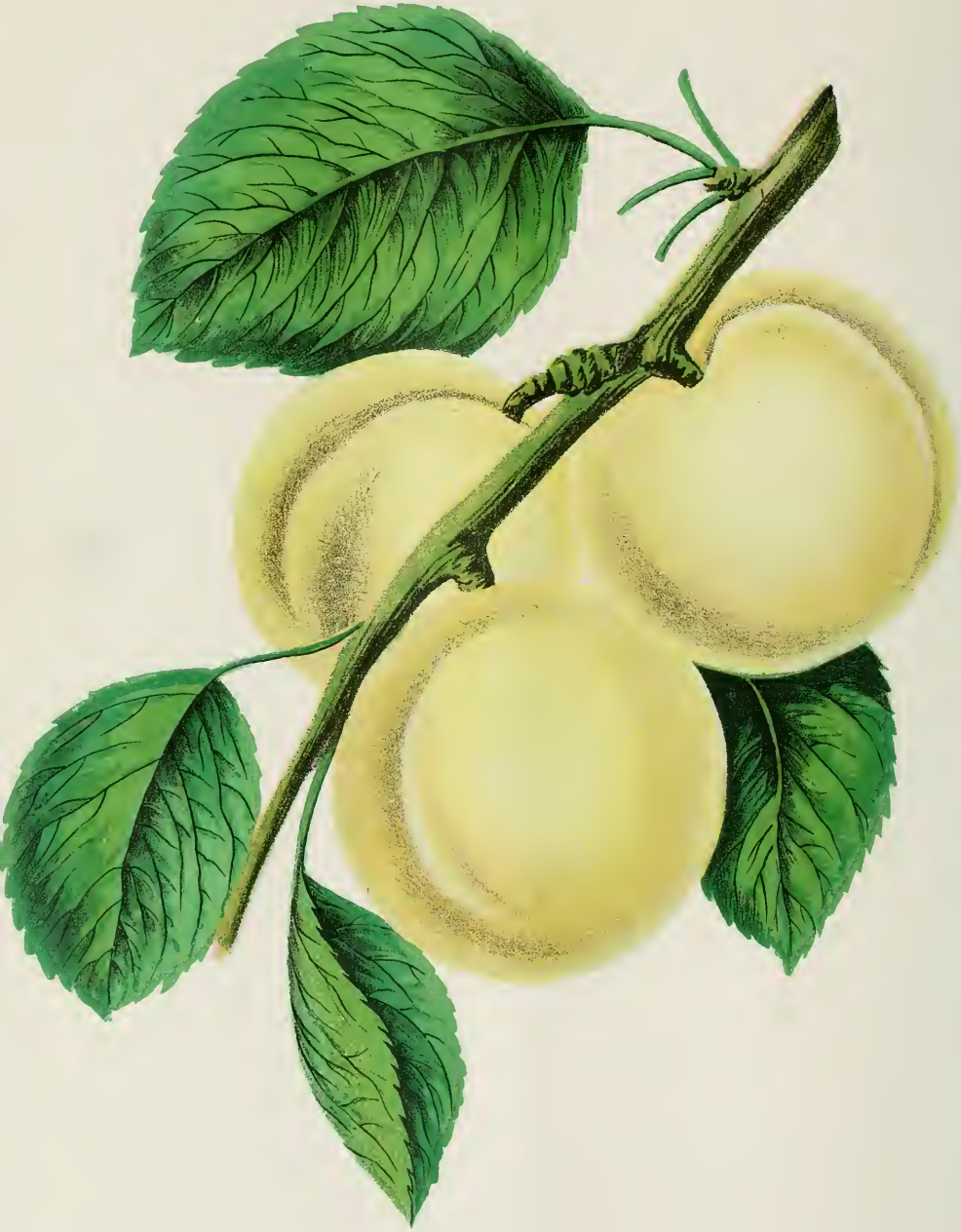
When unrelenting fate laid low
My love, I kissed his lips of snow,
Sair, sair, I wanted too to go.

But I have lived life's summer through,
And winter soon will claim his due,
My sacred flowers, a short adieu;

We'll meet again: for in my dream
I saw you in God's "Pastures Green,"
Blooming beside the Living Stream.

GRANDMA GOWAN.

MOUNT ROYAL VALE, MONTREAL, P.Q.



APRICOT—RUSSIAN VARIETY NICHOLAS.

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THE RUSSIAN APRICOT.

IN England the Apricot is esteemed as one of the choicest of stone fruits whether for jams or for dessert, and its great beauty when well grown is much extolled. The number of varieties is not great, being limited to about ten or twelve, among which the Moorpark, Breda, Peach and Royal are prominent. It is usually planted about twelve feet apart, and trained to grow fan-shape along the walls of the gardens or of the gables of cottages, and like the other plants and trees in an English garden, receives far greater attention in the culture, pruning, thinning, etc., than do the fruit trees in the majority of Canadian gardens. The most suitable soil is a rather light, sandy loam, well drained, such as is also adapted to the peach tree.

In America, the Apricot is very little grown east of the Rocky Mountains, owing to the curculio, which has a special fondness for it and usually destroys the whole crop; but west of the Rockies, where the curculio is almost unknown, nearly all the favorite English varieties are successfully cultivated. These have very few points by which they may be distinguished from each other, and the chief reliable ones are: The color, the shape of the stone and the taste of the kernels. All may be propagated, with more or less constancy from the pits.

Owing to the tenderness of all these varieties in our country and in the Northern States, a great point has been lately made of the introduction of the Russian stock to Kansas by the Mennonites for which every known excellence is claimed for them, as, for example: freedom from curculio, borer, black-rot, blight, etc. Now all this must be taken with some caution, although we have great hopes that from these will be ultimately developed a race of apricots suitable to our climate. The writer has some twenty-four of these trees, three years planted, and although they have bloomed freely, no fruit has as yet been produced. He has, therefore, no criticism to offer

as to the quality of the fruit, but some of them have not proved even hardy, for at least a half dozen have been winter-killed, and that in a peach orchard which has not been affected in the least by the cold.

Mr. G. C. Brackett, Secretary of the Kansas State Horticultural Society, says he paid a visit to the orchards of the Mennonites in Western Kansas, two or three years ago, and was rather disappointed in the condition of things; for while the trees themselves were perfectly healthy, and the fruit, when well grown, handsome and similar in quality to that of the well known English variety, the Breda, only rather more tart, yet much of it was so subject to the scab and the curculio that it was rendered worthless. Anyone, therefore, who buys trees of this apricot, expecting that he will not have any curculio to fight with, is likely to meet with disappointment.

Still we hope that from this stock some constant varieties of real excellence and acknowledged hardihood will result. This is claimed for some half dozen kinds now being propagated, as will be seen on page 99 of this volume in Dr. Beadle's article, among which is included the Nicholas, described as a fruit of medium size, sweet and melting, which ripens about the middle of July. None of these six commended varieties have been tested in Canada, but we have made arrangements to have one of the most desirable included in our list for distribution in the spring of 1890, so that our members themselves in various parts of Ontario may test them and report the result.

SEASONABLE HINTS FOR FRUIT GROWERS.

JUST in proportion to the increase in value and importance of the apple crop in Ontario, will be the interest of our readers in the best modes of grading and packing the fruit for market. Some twenty-five or thirty years ago bags were used both for gathering and marketing apples, and no thought was given to separating them into grades, with respect to perfection of growth. Apples in those days brought us from fifty to seventy-five cents a bag, but were the same methods employed at the present time, our local markets would be quickly over-stocked with apples in no condition for shipment, and there would be no sale for them except in such a season as this when we have an apple famine at home. But owing to the improved conditions, such as facilities for transportation and distribution, suitable packages for carrying fruit without injury in handling, shippers, commission houses, etc., better prices can now be obtained than in days of old, notwithstanding the largely increased acreage of apple orchards now in bearing in the Province. The farmer who neglects to grade his apple crop before offering it for sale is on a par with one who would offer his grain in the market without passing it through the fanning mill to separate foul seeds and other impurities from

the good grain. In Vol. 11, page 196

A GOOD SORTING TABLE

was described and illustrated, and one which we have found to serve a most excellent purpose in lessening the tedious work of fruit packing.

A writer in *Popular Gardening* describes another one which has some advantages, especially that one of a provision for emptying the fruit into the bottom of the barrel without the least bruise, a difficulty which has to be overcome, when using the other packing table, by means of a basket.

In fig. 66 we copy the engraving of this fruit sorter, and here quote the writer's description of it :—

The support consists of four legs *b*, *b* crossing each other X shape, and held together at the middle by a wooden or iron pin. To the upper ends of these supports are attached

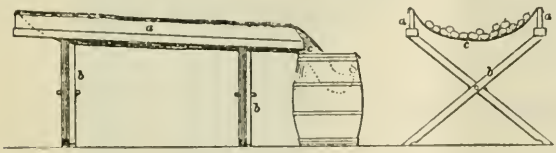


FIG. 66.—CONVENIENT FRUIT SORTER.

two light two-by-three bed pieces, extending lengthwise, each supporting a side-board *a* of inch stuff, four inches wide, with a similar piece across the back also.

The bottom, *c*, of the sorter is made of canvas, this being well tacked at the upper edge on the side and end pieces, with slack enough to form a trough three to five inches deep and hanging free from the sides, interiorly. The cross section view gives the right idea as to its form when ready for use. This canvas, it should be added, extends forward some two or more feet longer than the frame, for reaching down into the packing barrel, as shown by the dotted lines.

In using it, the extreme end of the canvas in the barrel is held up by an iron hook, which is attached over the rim of the barrel, thus forming a pocket into which the first fruit in the barrel falls, without injury; then when this pocket is full the hook is freed, and it is gently lowered to the bottom of the barrel and emptied. The front end of the sorter is of a height to allow of a barrel being set underneath, and the other is three inches higher to admit of the fruit being easily moved along the canvas as it is being graded. If more pitch is desired, this is secured by further tilting up the back end of the sorter. When not in use, this sorter can be compactly folded up by loosening the end pieces.

AN EXCELLENT APPLE-PACKER.

One of the chief troubles facing the farmer who wants to pack his own apples is in the heading up of the barrels. To stamp the heads in place with the feet is no pleasant operation, a mode at first tried by the writer, but gladly abandoned when the much more convenient method of using a lever press, such as is shown in fig. 67, was suggested by a friend. This latter is so simple in construction that any one can make it after seeing our engraving, and it needs no further description. Where there are only a few barrels to head, this press will answer all purposes, but as it cannot be handled to advantage by a single person, the screw press was found to be much more economical in a large orchard. It was used by apple packers for a long time, but has latterly been superseded by the apple packer (fig. 68), which we find to be the most convenient and speedy of any. This latter we

have been using for the last ten or fifteen years, and cannot conceive how anything more suitable to the work could possibly be devised. We

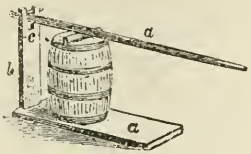


Fig. 67.—The Lever Press.

copy from the *Country Gentleman* a figure and description of this apple-packer, believing that there are many readers of this journal who would be pleased to have one made for their own use, if they only could learn how it is constructed:—

The cross-piece *a* is of hard wood, 22 inches long and 1½ inches square, under which is attached a 2 inch block 6 inches wide, 15 inches long. The vertical pieces *b b* are of rod iron 20 inches long, ½ inch in diameter, and pass through each end of cross-piece *a*, with nuts on the upper and lower sides. The rods *c c* act as clamps, are 15 inches long, loosely riveted to each end of lever *d*; *d* is of band iron 1 inch wide, ⅛ inch thick. It is semicircular in shape, and acts as a lever with fulcrum at each ends of rods *b b*, where it is loosely riveted 2¼ inches from either end. The operator places the block on head to be put in position, raises the lever, and fastens the clamps to chime of barrel, then by pressure of foot on lever, the head is brought down, and both hands are left free to complete the operation. The above can be made by any good blacksmith for $1.50.

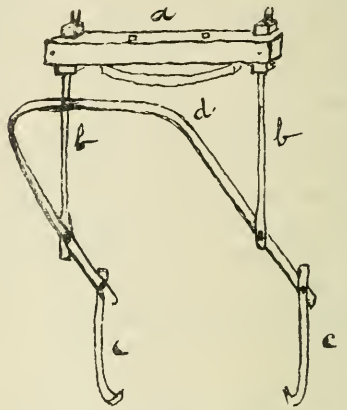


Fig. 68.—The Apple Packer.

THE CECROPIA MOTH (PLATYSAMIA CECROPIA).

We are just in receipt of a packet by mail (Aug. 23rd) containing an immense green caterpillar, together with some plum leaves upon which it had been feeding, with an inquiry what it was. We give in fig. 69 an engraving showing it life size, so that any of our readers may easily identify it. It is the larva of the Cecropia moth,

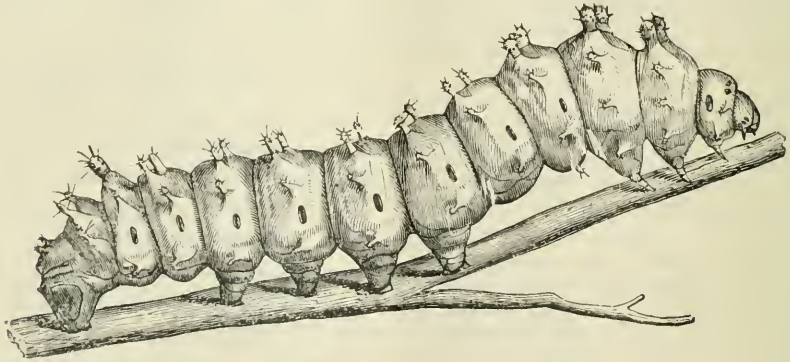


Fig. 69.—The Larva of the Cecropia Moth.

one of the largest and most interesting of all our native moths. The caterpillar is no dwarf, measuring as it often does some four inches in length, and being nearly as thick as a man's thumb. It looks rather pretty, with its pale green skin so beautifully ornamented with a double row of blue

Fig. 70.—Cocoon of the Cecropia Moth.

tubercles along each side, and a double row of yellow ones along the back, excepting those near the head and tail which are coral red. As one might imagine from his size, this fellow is a voracious feeder and is not over-partial to any one kind of tree; however it is most often found upon the apple and is able to defoliate a small tree in a short time. He has gone through several changes in exterior appearance, since he made his exit from the egg, and has now changed his clothes for the last time before his transformation.

It is worth the time for any of our readers who have an interest in the study of insects, to place one of these moths in a box and feed it a few apple leaves until it spins its cocoon, (see fig. 70) a rusty grey pod-shaped coffin, made of two layers of silk, in which it spends the time until its resurrection time, in the May or June of the coming spring. This cocoon is about three inches long, and sometimes the silk is unwound for use, but with much greater difficulty than that of the Polyphemus moth, which also belongs to the Bombyx or Silkworm family. Then, if one is so fortunate as to see it issue from its chrysalis, and develop into its beautified state, as we have done, he will feel amply repaid. Issuing forth from the smaller end of the cocoon it climbs up some convenient place where its wings may hang down, and gradually unfold their beauty; and, in the course of an hour, the insect will have developed to its full size, often measuring from five to seven inches from tip to tip of its wings. Our engraving, fig. 71, kindly loaned by the Entomological Society, is an excellent representation of this magnificent moth, which our readers cannot fail to recognize. The prevailing color of the wings is a rich brown, varied by a wavy dull-red band edged with

white, a kidney-shaped white spot about the middle of each wing, and other unmistakeable marks.

But with all its beauty, it is one of our enemies, and must be destroyed. Its large size, however, gives us so great an advantage over it, that there is little fear of its becoming a pest.

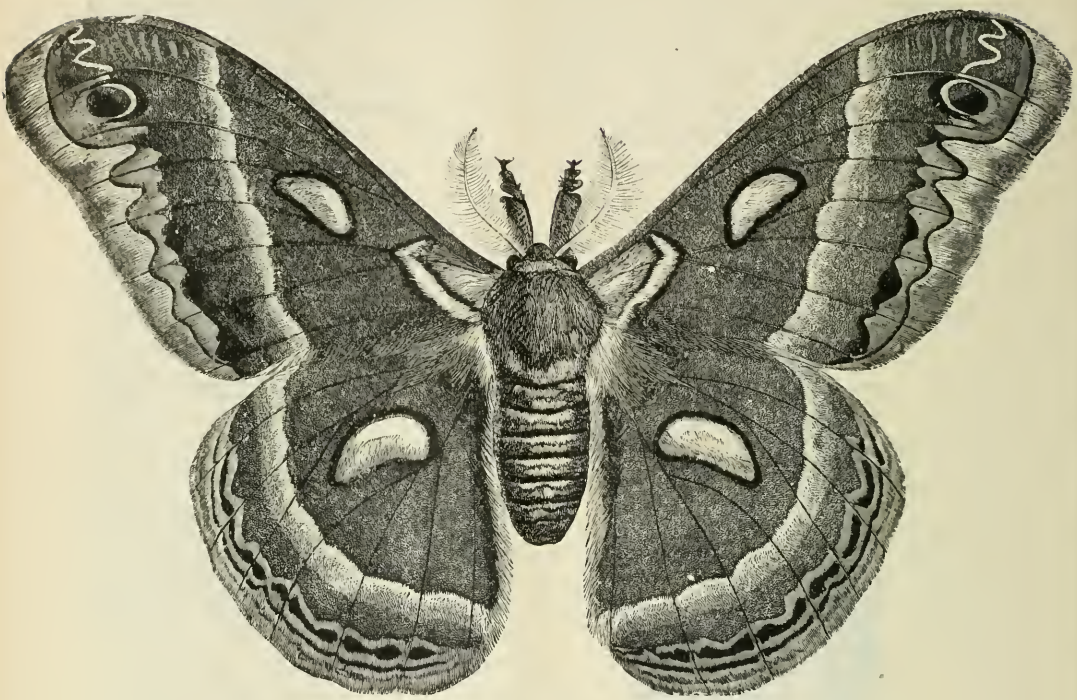


Fig. 71.—Cecropia Moth.

SPRAYING PLUMS WITH ARSENITES.

At the meeting of the American Association for the Advancement of Science, held at Toronto during the last week in August, this subject was taken up by Prof. A. J. Cook. He said:—

The arsenites and carbolized plaster will protect against the plum curculio if they can be kept on the tree or fruit. But in case of very frequent rains the jarring method will not only be cheaper, but much more effective. Again, as our wild fruits are more cleared away we must have plums in our orchards to protect the apples from the curculio. When apples are seriously stung they become so gnarled and deformed as to be worthless. It will pay, then, to set plum trees near by or among the apple trees. Then we will escape mischief among our apples from the curculio, and will only need to spray our apples once, to destroy the codling moth, and can treat the plum trees three or four times with Paris green or carbolated lime in case we have only occasional

showers, or can jar the trees when the rains are very frequent. For the apples we can use London purple, one pound to 200 gallons of water. For the plums we must use Paris green, one pound to two or three hundred gallons of water. If the carbolated plaster is preferred, we use one pint of crude carbolic acid to fifty pounds of land plaster. This is thrown freely over the trees, so as to strike every plum on the tree which is being treated.

Care must be taken not to spray the plum trees until the blossoms are all fallen, as otherwise it will kill all bees that visit the poisoned flowers. He suggested that it be made contrary to law to spray the trees with arsenites before the falling of the blossoms. Respecting the injury done the foliage by the use of arsenites, he said: London purple is more injurious to the foliage than is Paris green, and white arsenic—arsenious acid—is more harmful than is either London purple or Paris green. This is doubtless owing to the soluble arsenic which is quite abundant in London purple and almost absent in Paris green. London purple may be used on apple, plum, cherry, pear and most ornamental trees, but on these should never be stronger than one pound to two hundred gallons of water. If the application is to be repeated, as it must be for the curculio, to prove effective, or if it is to be used in June or July, Paris green should be used, in the same proportion as above, or else we should only use one pound of London purple to three hundred gallons of water. I now think that this necessity is more due to time of application than to the fact of increased quantity of the poison. If the arsenites are to be used on the peach, to defend against the curculio, Paris green only should be used, and that not stronger than one pound to three hundred gallons of water.

The injury done to the foliage is never immediately apparent. It usually shows somewhat the second day, but the full injury is frequently not manifest till the fifth day, and often not till the tenth. He likewise demonstrated that there is no danger of cattle being poisoned by eating the grass under the sprayed trees.

Prof. Clarence M. Weed, of Columbus, O., read a paper on a similar subject—remedies for the plum curculio. An experiment with cherries was made, spraying half an orchard with London purple (1 lb. to 160 gals. of water.) He then picked cherries from sprayed trees and unsprayed trees, and in every case there were more wormy cherries on the unsprayed than on the sprayed trees. The average was: — Unsprayed trees, eight per cent. of wormy cherries; sprayed trees, three per cent. of wormy cherries. The benefit from the spraying, hence, was 75 6-10 per cent. Experiments were also made with plums, when an orchard of plums was sprayed with London purple several times. An enormous crop was the consequence, although two untreated trees had their entire yield destroyed. He concluded that very much of the damage done by the curculio could be safely and cheaply prevented by the use of arsenites. Prof. Saunders, of Ottawa, expressed his opinion that Paris green was a better arsenite to use than London purple.

FRUIT GROWING IN A NORTHERN CLIMATE.

By L. Foote, Nepeau, Ont., near Ottawa.

AFTER twenty years' residence in the Ottawa Valley, in which time I have practiced a habit of close observation concerning fruit-growing, coupled with some experience, I would venture a few thoughts on the needs of that industry in a Northern climate. What is true here, is mainly so in the same isothermal lines of climate east and west of this, hence one feels that he has the agreement of a wide range of experience in what is needed to foster the fruit-growing interest, where so many discouragements must be surmounted.

One requisite is a class of nursery agents who will only sell such stock as will succeed in this climate. Hundreds of dollars of useless nursery stock has been palmed off on the farmers and would-be fruit growers of the Ottawa Valley, so that many are discouraged in the work of fruit-growing almost entirely.

There are some honorable exceptions, however, of agents who will only sell such varieties as they know will succeed with right treatment, and such win the confidence of the people and make good sales.

The "Experimental Farm" must prove a boon to the farmers and fruit-growers of the Dominion just in proportion as they appreciate and appropriate its benefits.

It has demonstrated the fact, that far more can be accomplished in the work of fruit-growing in this climate, than many thought ever could be, and yet the work of tree-growing is but fairly under way. All kinds of small fruits are a decided success, and all who visit the "Farm" are forced to admit that fact. A great variety of ornamental shrubbery and forest trees is well under way, and a fine collection of flowers adorn the grounds and greenhouses.

One quality to ensure success in fruit-growing in this climate is *perseverance*. The would-be fruit-grower must be prepared to contend with obstacles; not dive into every novelty that is presented that might do well in a more southern clime, but venture upon a few well-tested varieties of each class of fruit, and plant for *mutual protection*. I plant a row of currants in line with a row of apple trees, and a row of grape vines four feet from each row of apples and currants, with a view of putting a tile drain between them. Hedge and tight fence protection around the fruit garden aid in retaining the snow late in the spring, which is much needed to prevent spring freezing. Tramping a snow mound around each tree prevents mice from barking the trees, and keeps back the flow of sap until the hard northern blasts are past in spring.

Winter protection is a prominent item to success in this climate. I have used pine boughs as a protection to strawberries, and prefer them to anything else, as they keep the snow up from smothering, and allow the vines more liberty to come on early in the spring. Straw or forest

leaves serve a very good purpose if evergreen boughs cannot be had.

Grape vines must be buried or a large percentage will freeze out.

The two-arm system of training is preferred to the fan-tail by those who have tried both. The renewal system is spoken of by some, but I know of none that have yet practiced it.

But how to protect my Russian Apricots, and Lombard Plums is the burden of my enquiries at present. I have thought of a wrap of twisted straw, with a fold of tarred paper over that, painted white to resist mice and reflect off the sun's rays; also have been advised to use a thin board casing around each tree, and I think I will try both to test which is best. Hardy apple trees such as Tetofsky, Wealthy, Duchess, Alexander, Scott's Winter, Yellow Transparent, and a very few others, go through our long hard winters with encouragement, but a dozen varieties of the apple, except the hardy crabs, is enough to venture upon even by the most sanguine fruit-grower. Small fruits may be gone into with a certainty of success.

The tests on the Experimental Farm in currants, gooseberries, raspberries, blackberries, and strawberries, show a marked encouragement, and anyone visiting the "Farm" and noting the result of the tests can go away with the assurance that in small fruits at least, he may venture with perfect impunity in this climate.

Of strawberries, I am testing about fifteen varieties, quite enough for the average fruit-grower, either for market or home use. Among them are Wilson, Crescent, Sharpless, Cumberland, Triumph Dan Boone, Captain Jack, Maggie, Jessie, Bubach, Mt. Vernon, Ohio, Manchester, Charles Downing and Seneca Queen, all of which are a success. Last winter was a hard one on any damp ground owing to much rain falling and freezing, and many lost their strawberries, or a large percentage of them from this cause.

Taking all things into account, there is much to encourage the fruit-grower even here, where often five months of the year snow lies from two to five feet deep over the land. Apples grown here are of a good quality as a rule, being firm, juicy, and of a bright appearance, and good keepers if picked carefully. And now with reference to the *sanitary need* of fruit-growing and its more extended use through this country and I will close. It is a general practice with those pursuing the farming industry in the Ottawa Valley, to go to the lumber shanties in the winter, a practice which has greatly retarded the growth of farming interests. Life in the shanty is of a demoralising tendency to a great degree, both to body and soul. Strong tea, fat pork without fruit or vegetables, and that three times a day with dry bread, with a mixture of beans baked in grease, form the average diet of the shanty men. The result is: dyspepsia is quite a common complaint through the country. The practice of drinking a swallow of hot tea with every mouthful of food is very prevalent and correspondingly injurious. A free use of fruit is an

antidote to the above named practices.

If fruits were more freely used, both canned and dried, the medical fraternity would not wax rich so fast. Let this be pondered upon and profited by our farmers, and the benefits of fruit-growing will be more apparent.

FALL PLANTING OF STRAWBERRIES.

BY this we mean the transplanting of runners of the present year's growth, whether it be done in July or October. By care and skill it may be done as soon as the young roots are an inch in length, or even earlier. The rule is, however, that a plant is not old enough to set until it has branched roots; nor is it self-supporting until sometime later. For this reason it is necessary to remove one or more of the leaves when setting out very young plants in the summer, lest more sap be evaporated than the roots can supply. As the season advances, more roots are developed, and there is less risk in the operation. While it is true that the earlier the work is done, other things being equal, the greater will be the crop, it is equally true that plants set early in September, when there is more moisture in the air and soil, usually do better than those set in a hot and dry time. If delayed too late, the danger is that they will not get sufficiently rooted to enable them to resist the effects of alternate freezing and thawing. Young plants in the summer are comparatively tender and sappy, and much more easily injured than when more mature. If taken out of hard ground, the roots may be bruised or broken, and if exposed to the sun or wind for even a few minutes, many of the fine hair roots will be destroyed. For this reason it is not best to take up plants in a dry time. It is better to let them grow where they are until rains moistens the soil so that all the roots may be lifted without injury. The later the work is done the closer should plants be set to each other, so that they may fill the row with roots and shade the surface with their leaves. If set twelve inches apart in the row in July, ten inches will be enough in August, eight in September and six in October. The sun should never be allowed to shine on bare ground between plants in the row during the winter or early spring.

The soil for fall-set plants should be rich, so that their roots may find what they need near by, for they have not time to go far after it. It is well to prepare the place a week or two in advance, so as to let the ground get settled. And it is very important that the crown of the plant be not covered.

If the weather be dry and hot after planting, so that the plants wilt, they should get *one* good watering in the evening and the soil should be stirred the next morning. If this proves insufficient, they should either have some shade during the heat of the day, or the first leaves that wilt should be removed to lessen the evaporating surface.

If it is desired to test a new variety, the fall is the best time to plant it, for the reason that it will bear the next season and enable one to decide as to its value and give ample time to greatly increase the stock.

Fall-set plants must be protected during the winter. Two inches of straw will answer. Of course the drainage should be such that no water can lie on or near the surface.

—M. CRAWFORD.

FRUIT ROOMS.—HOW CONDUCTED AND MANAGED.

THE veteran fruit grower, J. J. Thomas, in a recent number of New York *Tribune*, offers some valuable suggestions in regard to fruit rooms and their management.

For common capacity, says he, the leading and essential requisites are a building or room with non-conducting walls, and ventilating windows which may be opened on cool nights for the admission of cold air and be closed again for retaining this cool air while the temperature is higher outside in the daytime. In very cold weather in winter the windows are, of course, closed to prevent freezing. One or two thermometers are to be used and frequently consulted for maintaining an even temperature. Such a house, properly regulated, will keep fruit a few degrees above freezing through a large part of the year, except in summer, when there are no cool nights for filling the apartment with cold air.

In a building like this, regulated as described, winter apples, which commonly decay before the arrival of the warm weather of spring, have been retained in good condition until the middle of June; and our early winter pears, such as Lawrence and Nelis, have been kept in fair eating condition into February and March. This fruit-room may be a separate apartment in the basement of a dwelling; or it may be a building specially erected for the purpose.

If a separate building it may be placed on slightly descending ground and sunk a foot or two below the surface, but this is not absolutely essential. Erect the frame of six inch studs, or eight inch if the building is large, and cover the inside, as well as the outside, with building paper, the studs being placed just far enough apart to receive the strips of paper with a little lap. Then board up both sides, over the building paper.

This double wall will be hardly sufficient protection against cold in the north; and additional protection is afforded by nailing vertical strips of lumber, an inch or two square, on every joist, adding another covering of building paper and another boarding. This will make three thicknesses of boards and three of building paper, and be sufficient to exclude hard frost without the addition of any sawdust filling, which, if used, will be liable to cause crevices by settling or to be disturbed by vermin. Use double doors.

Some fruit-houses have been built with two feet spaces filled with tan or sawdust, requiring useless labor and expense, as half that thickness would be quite enough in any case. The roof will be made in the same way as above described, with the shingles added. For small and very simple fruit-rooms or fruit-houses, windows placed on opposite sides, which may be opened to any degree either for the gradual or copious admission of fresh air, will be sufficient.

For a separate building, there should be a plank or board floor, with openings for the entrance of air from below, or there may be a slatted floor, which will always allow the entrance of the warmer air from the earth below and prevent the freezing of the fruit, in the same way that a basement is kept from freezing by the warmth of the earth. There should be ventilators in the underpinning of the building, which may be shut for the exclusion of warm air from without or opened to admit cool air in the night.

When cold air is to be admitted, the current for its entrance is caused by an Espy or Mott ventilator above the roof, which always produces an upward draft when there is any wind or breeze. A small fruit-room may occupy a portion of the basement of a house, if separated from the rest of the basement by a double brick wall,

and a double wall is provided outside above ground.

The same treatment must be given it as for a separate building, in maintaining a uniform temperature through windows on opposite sides, which are to be opened or closed as already described. Although less perfect than a separate fruit-house, it requires less care in attendance, and such fruit-rooms have kept winter fruit several weeks or even months longer than by common management.

In large fruit-houses, two stories high, the entrance should be through the upper story and down a flight of stairs, so as not to disturb the cool and equal temperature below in warm weather through the outside door.

Fruit for immediate or early use may be placed on a series of shelves, one above the other, in the center of the apartment for the attendant to pass around to select ripening specimens. Long keepers, or such as Russets, which shrivel easily, may be headed up in tight barrels, where they remain till spring. An intermediate way is to put the fruit in flat boxes, 1½ feet square and three inches deep, one box placed above another, in piles two or three feet high. All are easily examined by setting the top one off, then the next, and so on, thus forming a new pile.

No large fruit grower, to make the most of his products, can hope to get along without such or a similar structure.

TRIMMING CUTTINGS.

GERANIUM slips root readily, if we only prepare them properly. Select a thrifty shoot, about three to five inches long. Cut off clean and smooth with a sharp knife, then remove the lower pair of leaves with a close cut, and trim the leaves left, so that the cutting will resemble the one here illustrated. It is now ready for insertion in the propagating bed, or in a pot or box of sand. Sandy soil will do in absence of clean sand. Fuchsia and other cuttings are prepared in same way.—*Popular Gardening.*

Fig. 72.

New or Little Known Fruits.

Morse's Seedling Harvest Apple.

I again send you a sample of my Seedling Harvest Apple. My Seedling is about "neck and neck" with the Early Harvest, with a second or so in favor of the latter as a rule. But it can distance the old sort in vigor of growth, size, freedom from "spot," and the flavor pleases me better — and it also pleases most others better—but flavor is "a matter of taste." The fierce frost of May caused a few specimens to crack, but there are no spots, while Early Harvest near at hand on higher and more open ground, has the whole crop ruined by "spots"; other varieties subject to that evil have suffered more or less. The crop as a whole is a failure, very early and very late blooming are least injured. The frost, like lightning, struck whimsisically, and though not at all a respecter of high or low as to the person, it was, as to locality and aspect. Some have apples, some pears, some plums, some peaches, some most of the above, yet very few an abundance of either; much of the fruit is badly blemished by the weather and insect enemies. The codling moth and curculio are a vast majority compared with the fruit, and where reductive influences are not in force about ten or so insects seem to have applied for each specimen. The "blight" prevails to a slight extent, is present in both apple and pear.

My premiums of later years, Yellow Transparent, Niagara Grape, Vladime's Cherry, Jessie Strawberry and Louise Apple, are all doing from fair to very good. The grape somewhat protected was cut to the ground by the frost, while a Concord, some twenty-five feet away and not at all protected, partially escaped and is bearing some very fine fruit.

I am sure the Horticulturist is becoming more and more appreciated, and by the more progressive cultivators of both the useful and ornamental felt to be a *sine qua non*.—S. P. Morse, *Milton, Aug.* 21, 1889.

Reply by Editor.

This apple comes to us in good condition on the 23rd of August, and fully bears out all that was said in its favor on page 213, of Volume XI. of this journal. It is not quite so attractive in color as the Early Harvest proper, and of course is out of comparison with such varieties as the Red Astracan and the Duchess of Oldenburg; but, in point of quality for cooking, we judge it to be superior to any one of the three.

Seedling Pears.

I have sent you per mail, a box of my seedling pears for your examination. The tree that bore them is about ten or twelve years old and has now borne two or three years. This year it had about a peck on, last year it bore perhaps a bushel; the sample I sent you is about the average size.

The tree is an erect grower, thick

foliage, very healthy; the fruit is borne in clusters. I counted as I picked them, seven of those little pears to each cluster, for about a dozen clusters, but some had more on, some less, of this year's crop. Last year there were some branches completely covered with fruit; some spaces for two feet were almost solid packed with pears. I think they will beat the well-known little pear the Seckel. It think it well-flavored, sweet, juicy, neatly shaped with a short stout little stem which hangs well to the tree till ripe, not apt to be blown off by wind. For pickling it is just the thing and also for preserving or canning, or for eating fresh it is very good. I think a man could as easy eat a dozen of these as he could one of Clapp's Favorite.

Please report in the HORTICULTURIST what you think of them.—D. B. HOOVER, *Almira, Aug. 26th*, 1889.

Reply by Editor.

The package of pears came to hand in good order, but we cannot advise their propagation, as they are altogether too small to be grown for market purposes, and very few would plant pear trees simply for pickling pears. They are about the size of the Transcendent Crab. The quality is very good, but so is the quality of the Tyson which ripens about this time, and the Rostiezer is far superior, a pear hardly out of season yet, and these pears, though much larger than this seedling, will only command about 50 or 60c. per basket, while Clapp's Favorite and Bartlett, on account of their fine size, sell at nearly twice that sum. In these days a fruit must have some especial excellence to be worthy of commendation.

Scott's Seedling Peach.

I send you by mail a seedling peach grown on my grounds, Park Avenue, Chatham. Please tell me if it is a new variety, if not what is the name. The tree is young and only bore a few this year for the first. The balance on the tree are just ripe now.—J. L. SCOTT, *Chatham. Ont., Sept. 14th*, 1889.

Reply by Editor.

The peach is a magnificent one—equalling if not surpassing the Early Crawford in quality, and also resembling that popular variety in size and beauty of appearance. The skin is yellow with an exquisitely beautiful red cheek; flesh yellow, rich, juicy, and melting, and free from the stone; well worthy of propagation.

Wilder Early Pear.

Among the new fruits that promise well is the Wilder early pear, of which a very good drawing is here given. Mr. Vandeman, Pomologist of the U. S. Department of Agriculture, writes as follows concerning it:

"Among the midsummer pears there is none that pleases me more than this one, except that its size is rather small But like the Seckel, what it lacks in size it makes up in quality, although it is larger than that variety. It is a chance seedling, found in Chautauqua Co., N. Y. The original tree was partially grafted with scions of Buffum in 1870, when it was young, and would never have borne any fruit except of this old variety, had not three of the natural branches been left. These bear profusely, and the fruit, when fully grown, is quite attractive. It does not rot at the core.

Size, small to medium; shape, pyriform, bell-shaped, irregular, a little angular; surface, smooth, pale yellow

ground with deep shading of brownish carmine; dots very numerous and small; basin, shallow, regular; eye nearly closed, sepals long and reflexed; apex rather abrupt, with a slight cavity; stem short; core closed, very small; seeds very small, narrow, pointed, dark; flesh very pale, whitish yellow, fine grained and tender; flavor, sub-acid, sprightly, much like Bartlett; quality very good; season August, in Western New York."

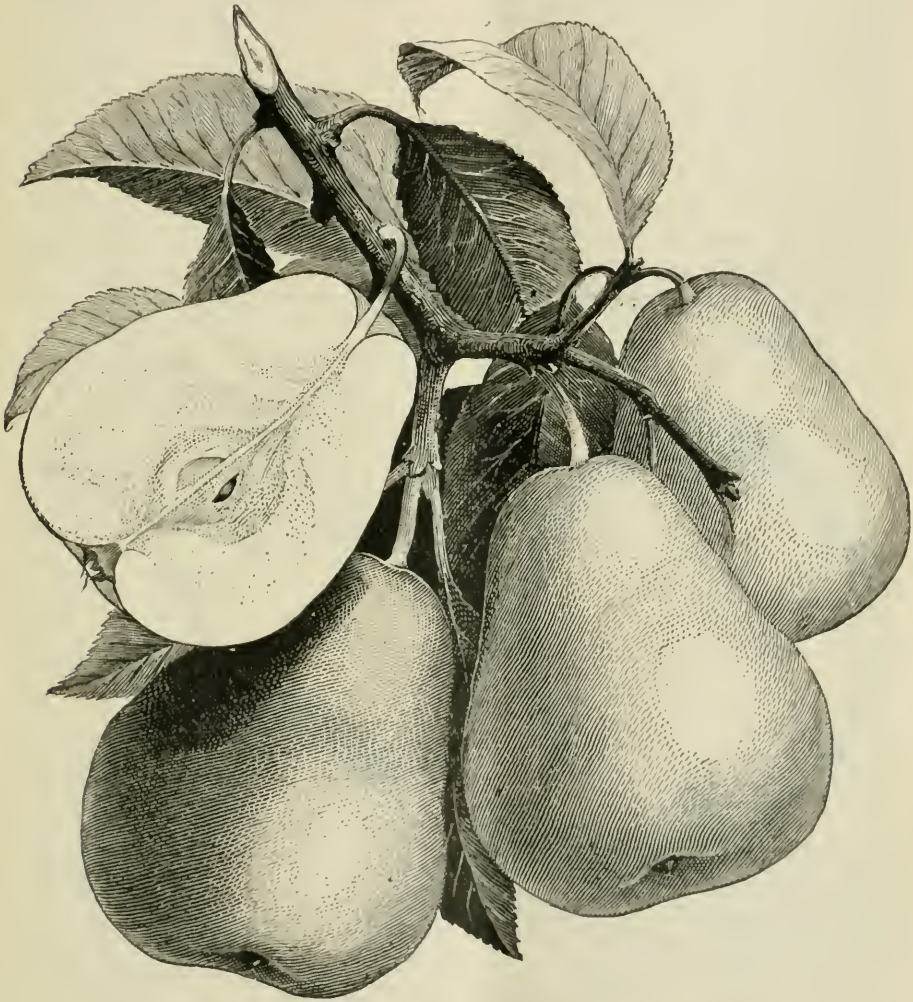


Fig. 73.—Wilder's Early Pear.

Seedling Plums from Owen Sound.

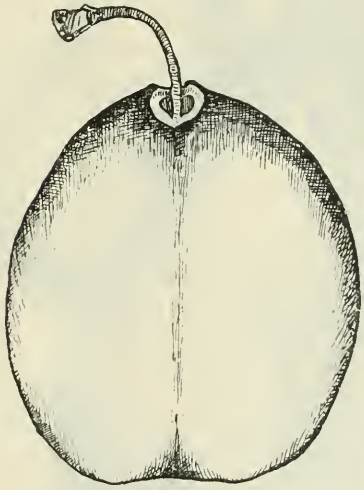
Sir,—Knowing as I do that you take a great interest in fruit growing I submit to you by express to-day nine plums for your correction and opinion of the same.

No. 1 is a plum that has been grown here for a number of years from sprouts without a name. I have shown it to the best judges in

this section and to Mr. Baron, of Toronto, and none were able to name it. Please name it if you can. You will observe it has a peculiar ring round the stem, which I have not observed in any other plum.

No. 2 is a seedling from Duane's Purple. The tree is healthy and appears to be a good bearer, this being its second year.

No. 3 is a seedling from Smith's Orleans. I have been growing the parent of this tree for a number of years until it died of old age. The tree has always been healthy, not subject to black-knot or any disease. The foliage is very dense, the leaves



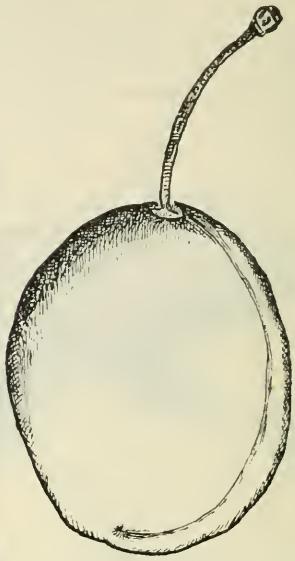
No. 1.

are thick, dark, green and leathery. I might also say the tree is an over-abundant bearer. — R. TROTTER, *Owen Sound, Sept. 3rd*, 1889.

These are all dark purple plums, with blue bloom and moderately tender flesh.

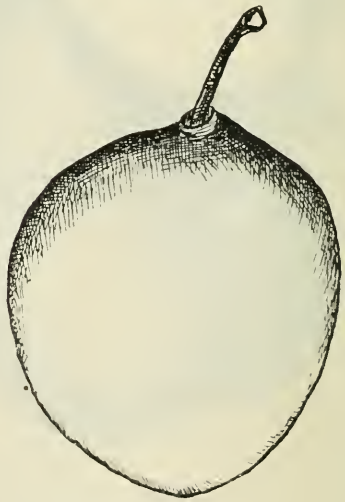
No. 1 is a very fine dark colored plum, obovate, with a broad shallow suture half round; stalk curved, surrounded with a peculiar ring, very good in quality. It much resembles Bradshaw, from which it may be a seedling.

No. 2 is a clingstone, with greenish flesh, and of rather poor quality, and under medium size.



No. 2.

No. 3 is a semi-cling, of yellowish flesh and very good quality. It is above medium size, and should it



No. 3.

prove, as it appears, an improvement upon its parent, and an excellent bearer, it should be better known.

Nos. 1 and 3 appear to be worthy of cultivation.

POISONING THE PASTURE UNDER THE TREES BY PARIS GREEN.

AN important practical question which I have tried to settle this season—1889—concerns the danger of pasturing under trees which have been sprayed with the arsenites.

A gentleman wishing to spray his orchard, in which he was pasturing seventy-five hogs, consulted me as to the wisdom of doing so without first removing the swine. I told him I believed there was no danger. I said use a mixture, one pound of London purple to two hundred gallons of water, watch your hogs closely, and if any seem affected remove all at once, and I will be responsible for damages to the amount of twenty-five dollars. The gentleman did so and reports no damage.

In the following experiments I used the mixture of twice the strength which should be used, that the experiment might be the more convincing. I used one pound to one hundred gallons of water. In every case the spraying was very thoroughly done. Care was taken that every twig and leaf should be drenched.

In tree No. 1 a thick paper was placed under one-half of a rather small apple tree. The space covered was six by twelve feet, or seventy-two square feet. The paper was left till all dripping ceased. As the day was quite windy the dripping was rather excessive. In this case every particle of the poison that fell from the tree was caught on the paper. Dr. R. C. Kedzie analyzed the poison and found four-tenths (.4) of a grain. Tree No. 2 was a large tree with very thick foliage. Underneath this tree was a thick carpet of clover, blue grass and timothy just in bloom. The space covered by the tree was fully sixteen feet square, or equal to two hundred and fifty-six square feet. As soon as all dripping had ceased, the grass under the tree was all cut, very gently, and very close to the ground. This was taken to the chemical laboratory and analyzed by Dr. R. C. Kedzie. There was found 2.2 grains of arsenic. Now as our authorities say that one grain is a poisonous dose for a dog, two for a man, ten for a cow, and twenty for a horse, there would seem to be small danger from pasturing our orchards during and immediately after spraying, especially as no animal would eat the sprayed grass exclusively. To test this fully, I sprayed a large tree over some bright, tender grass and clover. I then cut the clover carefully, close to the ground, and fed it all to my horse. It was all eaten up in an hour or two, and the horse showed no signs of any injury. This mixture, remember, was of double the proper strength, was applied very thoroughly, and all the grass fed to and eaten by the horse. This experiment was repeated with the same result. I next secured three sheep. These were kept till hungry, then put into a pen about a tree under which was rich, juicy, June grass and clover. The sheep soon ate the grass, yet showed no signs of any injury. This experiment was repeated twice with the same result. It seems to me that these experiments are crucial and settle the matter fully. The analyses show that there is no danger, the experiments confirm the conclusion. —*A. J. Cook, before Meeting of A. A. A. S. at Toronto.*

THE FRUIT TREE PEDDLER.

DURING the spring months fruit tree peddlers get a large amount of free advertising, and this year is no exception. Already the customary wail is going the rounds of the press against the wicked irrepressible canvasser. It has become the fashion to pounce upon him at this season of the year, and the whole world of newspaper correspondents and agricultural writers, great and small, are emptying their vials of wrath on his head, and advising farmers to let him entirely alone.

One writer denounces the agent for carrying with him picture samples of fruit twice as large as life and colored in a corresponding manner, and then advises farmers to order direct from a trustworthy nursery. I have no fault to find with this; it is certainly better to purchase nursery stock direct from a trustworthy nursery than of a rascally agent; but, on the other hand, would it not be just so much more preferable to buy of a reliable agent than of an unscrupulous nurseryman? Those highly colored pictures are, with hardly an exception, furnished by the nurserymen themselves. Some of the most extensive nurseries in the United States deal exclusively through agents and supply their agents with sample books, as do a large majority of firms engaged in other business. The illustrations in agents' sample books are taken from the finest specimens of the variety of fruit which they represent, and are, of course, larger and finer looking than the real fruit grown in a scrubby grass-grown orchard.

As a rule they as truthfully represent the real fruit as illustrations in catalogues of nurserymen dealing directly with the purchaser, or of seedmen, agricultural implement manufacturers, and livestock breeders.

In the same article the writer accuses fruit tree peddlers of pulling up fruit trees by the roadside, or in some farmer's yard, and palming them off for first-class nursery stock, and for this reason farmers should shoot every fruit tree peddler who dared to set foot on the premises. Why not condemn every merchant because a few rascals among the number mix sand with sugar, or would it not be just as sensible to advise fruit tree peddlers to shoot farmers because, once in a while, one makes butter out of lard, and puts stones in his hay to get even with tricky hay dealers?

I favor any movement to clear the country of rascally lightning-rod swindlers, patent-right men, and fraudulent fruit tree agents; but I do not see why all representatives of nurseries, and book agents, especially, should be sat down upon as frauds by every one who has enough literary ability to get his name in print.

The business of selling fruit trees and books is an occupation of which no man need be ashamed. Many a deserving young man has received an education and gained a foothold in life by spending his vacation canvassing the rural districts in the interests of some publishing house or nursery. The honest, respectable book agent or fruit tree peddler is a friend of humanity. He has carried fruit and flowers, and useful knowledge, to the utmost parts of the country, and caused roses, beautiful shrubbery, and intelligence to bloom where once grew unsightly briers and weeds of ignorance. While we condemn fraud, evil, and rascality, let us not be too eager to depreciate the valuable service, or worth, of the honest, intelligent, trustworthy canvasser.—LINDEN, *in Husbandman.*

Horticultural Miscellany.

Russian Pears.

The Bessemianka Pear (German "Samenlose," English "Seedless,") has gone through five winters, two of which were the coldest on record, in my grounds, without losing a bud. In each one of these winters, even the last, the thermometer has touched 40 degrees below zero; and in the two worst it was as low as that fully half the nights in January and February. These five year planted trees are now seven to nine feet high, and will bloom the present season. I have younger trees of fifteen other varieties, all of which Professor Budd of Iowa calls hardier than Bessemianka. I have been trying for twenty-three years everything called hardy among the older varieties of European and American pears, (including all the Maine and Western Vermont seedlings), with very little success; losing all of them in the two winters which left the Bessemianka unscathed. I have never yet seen the fruit of these new iron-clads; but from the account we have of them they will rate from "good" to "very good," none quite reaching the standard of "best" under the classification of the American Pomological Society. But they will give an extension of pear-growing at least 100 miles further northward.—*A writer in Orchard and Garden.*

New Formulas of The Bordeaux Mixture.

The following formulas, given to one of our grape-growers by Dr. B. T. Galloway, U. S. Mycologist, have been quite extensively experimented with in France for mildew, and have given very satisfactory results. Dr. Galloway advises that we try them, not only for mildew, but for rot also,

No. 1.

Sulphate of Copper	4 lbs.
Quick Lime	1½ lbs.
Water	24 gals.

No. 2.

Sulphate of Copper	2 lbs.
Quick Lime	¾ lbs.
Water	24 gals.

It has been found that the mixture does quite as well with the reduced amount of lime, and in two of the three places where experiments were conducted in France, these weaker mixtures did nearly as well as the old formulas, which had as high as twelve pounds of sulphate of copper. In the third place, they gave even better results than the stronger formulas. It was especially remarked that the weaker solutions adhered better to the vine. M. Millardet, the French experimenter, recommends also a formula, half way in strength between these two.—*Fruit and Grape Grower.*

Green Fruit Preservation.

Manager Brown of the State Board of Trade has in use a most excellent method for the preservation of the color and beauty of green fruits.

Liverpool salt is dissolved in clear water until the brine is strong enough to float the fruit. Let this stand over night, and then strain through a cloth until the liquid is perfectly clear. Place the fruit to be preserved in thoroughly clean wide-mouthed jars; fill to the brim with the brine and then close tightly. While this method for a long time perfectly preserves the bloom and color of the fruit, it, of course, unfits it for eating. Twigs with the fruit and foliage attached, when preserved in this way, are exceedingly attractive for exhibition purposes.—*Pacific Rural Press.*

Grading Fruit for Market.

Faulty packing is causing considerable trouble and complaint in the markets of the East, as well as our local market. The principal cause of complaint is from ungraded fruit. Growers must grade their fruits if they desire to secure anything like a market price. Your packers should receive positive, imperative instructions to grade as to size. Small fruit distributed through a box or basket of otherwise fine, large fruit, will kill the sale. There is hardly a shipment made but what should be packed under at least three grades as to size. Dealers and buyers having a trade for handsome, large fruit will pay a handsome price for packages well graded; others having trade for medium-sized fruit will purchase the same at a reasonable price; while others having a cheap trade will purchase the small fruit at a low figure. The net results from shipments thus graded will be far greater than to pick and pack all sizes together, expecting that the large fruit will sell the small fruit. This is one of the greatest mistakes that the fruit grower can possibly make. The large, fine fruit will sell itself at a good price, the other sizes and grades will sell themselves; but, if mixed all in the same package, the large, fine fruit will sell for no greater price than the small or medium-sized fruit would in a package by itself. This is the true business, and growers and shippers have been informed of it time and again, and in the face of these facts and information they will pick, pack and ship 3,000 miles to New York without the slightest regard as to grade, and frequently, fine fruits ungraded, sell in the New York market for barely enough to pay freight and shipping expenses; whereas, if properly graded, would pay the shipper a handsome net profit. California fruits at the East this year are receiving a terrible "black eye" from faulty packing. It would pay California fruit growers, through their various associations, to employ inspectors or graders, who should be called upon to inspect and pass all fruits packed for Eastern shipment, and the manager and despatcher of these fruits at Sacramento and elsewhere should be instructed not to show and forward fruits to the East that do not bear the inspector's stamp. Great injury is bound to result to the fruit growing industry of this state if more care is not exercised in the methods of packing, grading and style of packages used. Taking this season as a guide, unless some radical change is wrought, it is doubtful if growers generally will ever become packers and shippers to distant markets.—*California Fruit Grower.*

Domestic Notes.

This year all our fruit has been put up in one way, and that a very easy one. We make no pound-for-pound preserves, but can everything after this fashion. The fruit is peeled, or prepared in any way desired, and then packed into the bottles, with a sprinkling of sugar all the way through. The jars are then filled up with water and stood in the wash-boiler, with enough cold water to reach three-fourths up the bottles. The bottles are stood on boards to prevent them touching the bottom of the kettle, and the lids are put on, but not fastened. The boiler is stood on the stove and brought to a boil; it is left on for twenty minutes after coming to a boil. This cooks the fruit thoroughly; very soft fruit will do with a little less. When the jars are lifted out, a little boiling water must be poured into them, so as to fill them up, and they must then be sealed immediately. This is a very satisfactory way to do strawberries, peaches and pears.—*R. N. Y.*

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

Notes and Comments.

A Visit from Prof. Burrill.—It was with great pleasure that we entertained the celebrated microscopist, Prof. Burrill, of the Illinois State University, Champaign, Ill., for a day at Grimsby just after the close of the meeting of the A.A.A.S. at the halls of the University of Toronto. He is engaged under the U. S. Government in investigating the cause of the peach yellows, and should he succeed in defining the nature of this mysterious disease, we may next hope for some remedy. We visited several of the peach orchards of Grimsby, in each of which specimens of diseased trees were only too easily found, and he took away samples of the wood, fruit and roots of affected trees for careful microscopic study, promising that if any good should result, he would communicate it for the benefit of Canadian peach growers, through this journal.

It was a privilege to look through his powerful instrument and see the minute microbes which cause the pear blight, mounted from diseased trees in our own orchard, and to listen to his explanation of their mode of operations. He also showed us the microbe of the peach yellows, but says its habits are much the more mysterious, for while the blight microbe has the power to make its way by a kind of corrosion from cell to cell of the pear tree, no way for such progress of the former has as yet been discovered, and, notwithstanding this, it is found in all parts of a diseased tree.

We asked him if there could be any mistake in the statement that the microbe was the cause of the pear-blight. He said there was not; he had isolated some of them from the tree, and had caused the parasitic organisms to grow and increase in numbers, on a certain prepared gelatine, in a closed glass tube. He had then applied some of these microbes to a perfectly healthy tree, and blight was the result.

In reply to our inquiry as to best time for cutting off blighted limbs of the pear tree so as to prevent its spreading, he said that the microbe most frequently found entrance through the blossoms, and that the trees should be carefully examined at that time and all blighted blossoms cut away before the mischief

had time to spread. The tree should be visited every week or two for a few times in succession, and, by careful removal of all affected wood as far down as any discoloration of the inner bark was discernible, much of the injury to our orchards from the pear blight would be prevented.

He also stated that the blight of the apple and quince was due to the same cause as that of the pear.

Simon's Plum.—A fine specimen of this fruit was sent into this office on the 6th of Sept. and was carefully measured. It was exactly six inches in circumference every way.

The Wager Peach gives us a favorable impression this season. Trees three years planted are well loaded with fruit, ripening about Sept. 12th, along with the Old Mixon Free-Stone. The tree is a good grower, the fruit is of medium size, oval, with swollen point skin, fine yellow, with red cheek; flesh firm, yellow, of good quality. We believe that this will prove a valuable market peach for Ontario peach growers, and doubly desirable if, as some claim, it will reproduce itself from the pit, for by this means any one can grow his own trees at little expense.

Concord Grapes.—The first shipments from Maplehurst Fruit Farm were made on the 18th of September, and continued regularly. No grape is giving such constant satisfaction under all circumstances and conditions. This season all Rogers' varieties have failed, and Niagaras have dropped, but Concords are laden with beautiful clusters. We find the results vary with the kind of soil. On a heavy clay loam they are earlier and sweeter, but small, while on rich sandy loam they are later, but very large berries. One we measured and found it three inches and a quarter in circumference, due partly to ringing.

Caution About Paris Green.—A serious typical error escaped our notice on page 68, under the above caption. In our note the word "pint" should be "pail."

Mitchell's No. 1 Tomato, as grown on the grounds of the Canadian Horticulturist, is equal to Acme or Hathaway in productiveness, rather larger and of a better flavor.

Early Grapes. — Moore's Early Grape was ripe, on the writer's fruit farm, about the 1st of Sept., and the first basket was shipped on the 3rd of the month. The vines were loaded with fine sized fruit which was sweet and desirable for the table. It was sold wholesale in Toronto market at 8 cents per pound. Why grow any more Champions? Worden began ripening on the 7th, and on our vines is about equal to the Concord for productiveness. No Concords were colored on that date except a few which had been ringed for experiment, or had been tied too tightly to the trellises, in which case the same effect was produced. It is evident that ringing will cause earlier ripening and larger berries.

Irrigation with Tile.—Such a season of drouth as some sections of Ontario have just passed through will lead our gardeners to consider

Fig. 74.—Mode of Irrigation with Tile.

favorably any proposed system for overcoming this serious drawback to their success. We notice in an exchange an easily worked plan for irrigating with tile. By means of the farm windmill, a tank reservoir may easily be filled, and thus the necessary

water and pressure for flooding small areas may be obtained. The water is distributed by means of common drain tile, using sizes from two to four inches in diameter; the larger for the main or distributing tile and the smaller for branches. The tiles are laid at a depth of about a foot or fifteen inches below the surface, the excavations being made by a plow without much expense, and the lines of tile are laid about ten feet apart. When the water is turned on, into the standpipe, it will fill the pipes to their extremities, which, of course, are closed, and a portion of the water, constantly escaping by the joints, will work its way by capillary attraction toward the surface of the soil. One acre is about the extent which may be thus worked under one system of pipes and machinery.

The Yellow Transparent.—Our top grafts of this Russian have borne some fruit with which we were much pleased, except with the size which was below medium. Its earliness gives it every advantage in the market, especially as the Early Harvest is no longer to be depended upon on account of the spot. Dr. Hoskins, of Vermont, has had some favorable experience with it, which we find published in the *Orchard and Garden*. He says:—"As to the other apples of this family, the fruit is very similar, when grown under identical conditions, though I find White Transparent smaller, and better in quality than the others. The whole family are more or less subject to blight, attacking not only the bark in the forks of the branches, but the limbs, much like pear blight. I regard Thaler and Sultan as identical, and they are both destroyed by blight in my grounds in a very few years. Y.T. is much more resistant to the disease, the majority of my trees escaping it altogether; but if allowed to over-bear, even it is short-lived, as compared with most American varieties. The trees should have rich ground and surface cultivation; and I find 12 feet apart in the row wide enough, as they will not often remain profitable after reaching a size to meet at that distance. While they do last, however, no apple is more profitable. Even my culls netted nearly $1.00 per bushel last year; and trees three to five inches in diameter gave from 4 to 6 bushels of perfect fruit, sold mostly as they ran at $1 per 100, which is a little more than half a bushel, though of select specimens 100 will make nearly a bushel. They were all sold in the home market, this being a summer resort; but Boston dealers have told me that even lots of good size would easily net $1.00 per half bushel crate in that city, as there is no apple there equal to it in appearance or quality at that season."

The Crandall Currant.—Mr. L. H. Bailey writes in the *American Garden*, that he does not find any trace of hybridization in the plants of this currant, and regards it as a simple variation of the Buffalo currant. In his estimation it has some decided merits, especially for amateurs, promising a new and valuable type of fruit for our gardens. In jellies it is better than most other currants and is good in pies or as sauce. It needs to be eaten fresh, because, after standing two or three days, the berries become tough and almost inedible. It is variable in size and in period of ripening, but may be easily gathered singly, like gooseberries and cherries.

Our Winter Meeting.

The next annual and winter meeting of our Association will be held in the city of Windsor, during the second week in December.

The meeting will be ably supported both by local fruit growers and by

our Directors, and a series of important topics will be discussed, such as "Fruit Exhibits at Fairs," "Judging Fruits," "Fruit Lists for Ontario," "Values of the Various Kinds of Apples," Evaporation of Fruits," "Apples for Stock," "The Cultivation of the Peach," "The Cultivation of the Pear," "Grape Growing for Market," "Currant Culture for Profit," "The Fall Purchasing of Trees," etc. Now is the time to make further suggestions to the Secretary of such subjects as any member would like to have taken up and discussed, as the officers desire to make the meetings and the Report as full of variety and as interesting as possible.

The meeting is to be held in Windsor in response to the invitation of the North Essex Farmers' Institute, whose worthy Secretary, Mr. N. J. Clinton, takes a deep interest in our work.

The Windsor Board of Trade and the Windsor Vine Growers' Association will also co-operate with us. The Michigan Horticultural Society promise to send us some representatives, and the New York State Horticultural Society will probably be represented by Mr. S. D. Willard, of Geneva, N.Y.

In many places there seems to be an impression that only members may attend our meetings. This is a great mistake; our object is to advance the interests of the Province by encouraging the industry of fruit culture, and unless we can get the ears of the public how can we do them any good? Will our readers please correct this error, and encourage the public, both ladies and gentlemen, to attend our meetings.

The Dominion Convention.

Over a year ago it was agreed between the Montreal Horticultural Society and the Ontario Fruit Growers' Association that a Dominion Convention of Fruit Growers would be of great benefit to the Dominion, by discussing the capabilities of the various Provinces for fruit culture, the most hardy fruits and those adapted to the colder sections, Forestry, Economic Entomology, and various other subjects of general interest. The report of such a meetlng would form a volume of great value for distribution by the Government in foreign countries, as well as throughout the whole of our vast Dominion.

The Minister of Agriculture, Mr. Carling, has given his approval to the scheme, and a vote of $2,000 has been made to carry out the proposed convention. It will be held in Ottawa in February next, and the programme is now being arranged.

QUESTION DRAWER

The Brown Rot of the Grape.

77. I write to you for information. My grapes just now are affected with a disease. I know not what to call it. They are now fully formed and by degrees are turning a dark colour and fall off the vine. On cutting them open they have a peculiar smell as if decaying. It is only the Rogers grapes that are affected so. Concords and other kinds I have are not so affected. Grapes are but a small crop with me this year. You, perhaps, may be able to say what the disease is, and if any are affected in the same way up west, or perhaps some of your numerous subscribers may have some grapes diseased in the same manner. Our crops in this section of Canada are excellent. We have not had for many years anything like it.—James Rosamond, *Almonte, Lanark Co., Ont.*

Reply by B. T. Galloway, Chief of Section of Vegetable Pathology, Washington, D.C.

The grapes are affected by what is known as Brown Rot, a form of the downy mildew which attacks the leaves. We send you a description of the disease. There is no doubt that the Bordeaux mixture, if used early enough in the season, will prevent the ravages of this parasite which seems to be the principal grape trouble north of and including New York state.

(1.)—DOWNY MILDEW, BROWN AND GREY-ROT.

These diseases are caused by a fungus known as *Peronospora viticola*. When the *Peronospora* attacks the leaves the disease is known as the downy mildew; when it attacks the berries and destroys the pulp without forming external reproductive bodies it is brown-rot; when it occurs on the young fruit and covers the berries with its greyish conidia or "seed" grey-rot is the term applied to it.

Leaves affected with downy mildew show, upon the upper surface, greenish yellow or brownish spots of irregular size and shape, while opposite these discolorations, on the lower side, a downy, whitish, frost-like growth may be seen. In advanced stages of the disease, or after a heavy rain, the frost-like patches often disappear, leaving in their place light brown discolorations corresponding in size and shape with those on the upper side.

Brown-rot usually appears when the fruit is nearly full-grown and, as already stated, there is no external evidence of the presence of a fungus. Purplish brown discolorations appear as a first manifestation of this form of rot. Soon the entire berry turns brown, the pulp becomes soft and often shrinks, forming depressions, over which the wrinkled yet otherwise smooth and unbroken skin is stretched.

In the case of grey-rot the berries and often the pedicel are covered with a frost-like growth similar to that which occurs on the leaves. In fact the characters of this disease are so well marked that a further description is useless as it cannot well be mistaken for anything else.

(11.)—THE POWDERY MILDEW.

This mildew usually makes its appearance toward the middle of summer and continues until frost. It attacks the leaves, young shoots and fruit, covering them with a powdery meal-like growth altogether different from the downy mildew, also differs from the latter in that it occurs abundantly on the *upper* surface of the leaves where it forms mealy white patches of various sizes and shapes. Occasionally it is spread out quite evenly over the entire surface, resembling in some respects the delicate web of a spider. Fruit affected with the powdery mildew shows on the surface a coating of whitish, meal-like dust; this rapidly increases in thickness and soon the berries shrivel, the skin cracks, admitting other agents of decay, which soon finish the work of destruction.

Wine Making.

78. WOULD you kindly answer the following question in your excellent publication, viz., how to make a fair quality of wine from say from 3 or 4 gallons of grape juice? I have good receipts for large quantities with proper appliances but not in small quantities I have made a good wine from red and white currants in small lots.—A J COLLINS, *Listowel.*

In reply to our correspondent we cannot do better than to give the following quotation from an exchange:

"The grapes are allowed to ripen well before being gathered, when the juice is expressed and bottled immediately. The bottles are filled to the brim and then placed, up to

their necks, in vats of water within ten degrees of the boiling point.

"When the must and water are of the same temperature, the corks are forced into the bottles, expelling some of the fluid to make room for themselves. This part of the work must be very carefully done, as the least measure of air remaining between the cork and the liquid will cause fermentation. As the liquid is in a heated state when the cork is forced, it will contract as it cools, leaving a space between the cork and the liquid; but if the cork is, as it should be, thoroughly air-tight, this vacancy will not be an atmospheric chamber and will not injure the liquid. If fermentation should set in, it can be driven off by reheating the wine. The bottles are then placed on their side in a cool place and then the organic particles in the must be allowed to settle.

"This settling may last any length of time the manufacturer chooses, but sufficient time must be allowed, for foreign substances must be allowed to settle on the sides of the bottle. Then it is decanted into other bottles leaving the sediment behind. These second bottles must also be brimful and heated up to the same degree as before and corked in precisely the same manner, using sealing-wax to exclude air. The wine is then allowed to cool in the ordinary way, and must be kept in a cool place. It will keep as long as it is kept free from contact with the atmosphere."

The Ailantus.

79. WILL the Ailantus stand the winter in this latitude without protection?—W. W. H., *Toronto.*

The Chinese Ailantus, or Tree of Heaven, is quite hardy at Grimsby, and probably would be at Toronto. In planting it we would caution our enquirer to choose the pistillate tree and not the staminate, for the flowers of the latter are anything but heavenly, and are very injurious to the lungs of some persons.

Aloe and Agave.

(SEE QUESTION 74.)

Reply by Anton Simmers, Toronto.

(1) Technical name of "Devil's Tongue"—*Chamorlirium.* (2) Proper cultivation of "Devil's Tongue" is the same as that given below, with the exception that we do not cellar these plants but endeavor to keep them growing throughout the winter indoors. (3) Proper cultivation of "Variegated Indian Aloe"—generally grown in pots, consisting of loamy soil mixed with sand to prevent the soil from souring; add to this say half a pound of bone meal as a fertilizer which will be found beneficial. The plant should be kept in moderate moisture, and placed in any location, shady or otherwise, will thrive. During winter we cellar them and keep occasionally watered to sustain life. The cellar should be one frost-proof. (4) Proper soil for "Dew Plant" is a sandy loam well enriched with manure. (5) Technical name of "Dew Plant is *Mesembrianthemum Crystallinum.*

Tigridias and Wisterias.

80. THE Tuberous-rooted Wisteria and Tigridia which I received as premiums are making a fairly good--but not very thrifty—growth. I have them growing in pots but out doors. Will you kindly inform me how they are to be preserved through the winter. Must the tubers be taken up and dried and stored away as we do those of the Gladiolus, or had they better be left in the earth as with the Japan lily, If the latter, should the pots be put in the cellar or not? Should they be left quite dry or watered? An answer to these questions in the next number of your valuable magazine will oblige—ELIZABETH TRIGGE, *Eleven Oaks, Cookshire, Que.*

Reply by Herman Simmers, Toronto.

In reply to questions sent by your subscriber, I am pleased to answer as follows, viz.: The Tigridias are

treated in precisely the same manner as the bulbs of Gladiolus, taken up in the fall and dried, and kept in such a manner until the spring, when they may be planted the same time as the Gladiolus. The Tuberous-rooted Wisteria bulb is quite hardy and may be left in the ground all winter, without any danger of their freezing.

OPEN LETTERS.

Apples a Failure in Huron Co.

DEAR SIR,—I duly received the numbers of the HORTICULTURIST and also the Report, and since reading them I am sorry that I did not join your Association long ago but "better late than never." We have had a good crop of small fruits and in such a year as this when the apples are a total failure, a succession of strawberries, raspberries, etc., for table use and canning purposes will no doubt supply a part of the deficiency.

I was very much pleased with the Report. It is well worth the subscription price alone.—A. S. DICKSON, *Seaforth, Aug. 24th*, 1889.

Prunus Simoni.

SIR,—I notice your remarks in the September HORTICULTURIST about Simon's Plum. I find it hardy here. It fruited with me this season, measuring over 6 inches and resembling cut; flavor excellent and a grand perfume.—W. A. HAMILTON, *Collingwood*.

SIR,—According to California journals, "the *Prunus Simoni* develops into a handsome, oblate, deep purple plum, much larger than it appears in the engravings of the fruit grown elsewhere," etc.—T. B. JENKINS, *Horticulturist, Rochester*.

SIR,—I have read with interest your July and August numbers. I am somewhat interested in the discussion on the *Prunus Simoni*. The plate in the July number has been shown to an agent representing a nursery at Iowa City, thirty miles south of here. He informs me that instead of being overdrawn, as Prof. Van Deman tells us, in the August number, it does not much more than represent one-half the actual size of the plum as fruited by a Mr. Coughman, at Iowa City this season. He represents the fruit beautiful and fine for canning. Notwithstanding the discredit thrown upon the fruit by Prof. Van Deman I shall plant in the spring at least 50 trees of it.—A. B. DENNIS, *Cedar Rapids, Iowa, Sept. 11th*, 1889.

Wickson's work on California fruits, in the portion devoted to plums, says that *Prunus Simoni* has a "sweet, rich, aromatic and delicious pine-apple flavor." This will surprise any one familiar with its worthless character, which can hardly be so greatly changed when cultivated in California.—*Extract from Country Gentleman*

OUR FRUIT MARKETS.

High Prices for Apples.

OUR remarks upon the value of apples in the last number are being more than sustained. In fact, except in a few favored sections, there are very few apples in the country. In some counties bordering upon the southern shore of lake Ontario, and the northern shore of lake Erie, especially in Essex and Kent, a fair crop is reported, but on the whole there will probably not be one-third of last year's crop in all Canada, and the percentage in New York state and Michigan will be very little higher. Indeed Chicago apple buyers have already been operating quite freely in Western Ontario and as early as the first week in September had secured some 20,000 barrels at $2

per barrel, f.o.b., for fall apples, and $2.50 for winter apples. Montreal men have also been in the field, and some of them have been contracting heavily, so that a lively competition is at work to bring up prices to an unusual scale. It is even stated that quite recently the sum of $3.25 per barrel was paid for 1,000 barrels of winter fruit f.o.b.

We think, therefore, that there is every encouragement for those of us who have an apple crop to expect high prices for our stock right at home, and we do not advise great haste in selling, unless outside figures are to be had.

Prices of Pears.

If apples are bringing a surprisingly high price what shall we say of pears, which have sold during the latter part of September at a higher figure than was ever known in Canada? Bartlett pears went up to $15 per barrel, and even $20 has been paid for some of fine quality. Fine Flemish Beauty pears have been selling as high as $6 to $10 for No. 1 quality.

Great Britain.

Sir,—As usual at this season of the year, we beg to give you a summary of the most authentic reports we have been able to get, as to the crop of Apples in the United Kingdom. Up to date we have reports from 94 different parts, and these may be classified as follows:—Total failure, 13; very poor, or almost a failure, 38; very partial, or under average, 24; average, 17; above average, 2; Total 94.

There are some districts from which we have not yet received any special report, but we have no hesitation in placing above figures before you as representing the general crop of this country. If we should later on receive any advices that lead us to believe otherwise, we shall at once inform you.

From the above statistics it will be readily seen that the Home Supplies will be very small, and, therefore, the prospects for shipments from U.S.A. and Canada are correspondingly good. We, however, again call your attention to the advisability of not shipping small or common fruit, as if any quantity of this class arrives, the result will certainly be unsatisfactory.

The crop in Belgium and Germany is reported good, but light in France.

We look for a good demand for fruit of good size and quality, but again advise our friends that they *cannot be too careful in their packing*. J. C. Houghton & Co., *Liverpool, 28th Aug.*, 1889.

Sir,—Messrs. J. C. Houghton & Co., Liverpool, cable that about 500 bbls. Apples ex "Umbria" met with a fair demand today and the following prices were realized: Kings, 25s. to 26s.; Baldwins, 12s. 6d., to 14s. 6d.; Greenings, 10s. 6d, to 13s. 3d.; Hubbardsons, 12s. 9d., to 15s.

Messrs. James Lindsay & Son, Glasgow and Edinburgh, cable that they have realized the following prices in their markets: Maiden's Blush, 21s. to 24s.; Cranberry Pippins, 16s. to 20s.; Kings, 21s. to 28s.; Baldwins, 15s. to 16s.

The shipments for the week ending September 7th amounted to 6,366 bbls. from all ports to all ports, including 1,700 bbls. from Halifax to London. Otto G. Mayer & Co., Per Josiah Rich, *New York, 11th Sept.*, 1889.

Sir,—The apple season of 1888-9, although resulting in the largest arrivals that have ever been received in this country, cannot be looked upon as a satisfactory one, as the low prices caused by the supply so much exceeding the demand, must have been very disastrous to shippers. The first shipments were received in August; the invariable results of these early shipments is always disastrous, and this season proved no exception to the rule. Fall fruits never arrive in a condition to command high prices and come into competition with arrivals here from Lisbon, Oporto, and France, and the bulk of our own growths, which are mostly of early varieties. By the time the Winter Fruit, arrive here these shipments cease, and the demand for American Apples fairly sets in; but during the past season they came in such quantities that the prices never ruled high, and the great rush made by Canadian shippers to get their stock here before the close of navigation—combined with large shipments from New York and Boston, caused such a congestion of apples on the market that prices dropped steadily, until they got to a point when there was very little margin over freight and charges, and the stock was not cleared away until after the Christmas holidays. From that out arrivals still continued heavy, but we were able to use them all at prices ranging from 10s. to 15s.

The total arrivals into the U.K. were 1,491,382 barrels, which was far in excess of any year since the large crop of 1880-1, when the quantity was 1,328,805. For the previous four years, say from 1884-5 to 1887-8, the average of seasons was 775,264 barrels.

From reports we receive from all parts of Canada and the United States the crop for the coming season will be from 50 to 78% of an average one. This fact, in conjunction with an unusually light domestic crop, should enable us to get good prices for what are sent over here.

The crops of soft fruit in this country and the continent have been light, and, with the price of sugar abnormally high, the manufacture of preserves has not been excessive, which will operate in favor of good prices for apples during the coming season. GREEN & WHINERAY, *Liverpool, Sept. 4th*, 1889.

SIR,—Several small parcels of New York apples have been realized on this market at: Kings, 18s to 20s. 6d.; Baldwins, 9s. 6d. to 14s 6d.; Greenings, 12s. to 12s. 9d; Various, 12s to 14s., the quality and condition of the fruit on the whole was poor, especially the "Baldwins." With moderate supplies of good fruit we anticipate better prices, but inferior and smaller grades will return poor results.

You will have noted our opinion on prospects from our circular letter.

As regards fall fruit we strongly recommend all shippers to send *only* the best keeping qualities of good size

During the season should you desire it, would be pleased to keep you posted with the movements of this market WILLIAMS, THOMAS & Co., *Liverpool, Sept. 5th*, 1889.

Philadelphia.

SIR,—The *apple crop* failure in the Ontario "Lake region" of New York means a short Eastern supply this season, and the general quality was never poorer from worm and blight. The eastern crop is generally reported short and faulty—Nova Scotia about fifty per cent. of last years.

Since peaches are about done, our market already feels the effect of *scant supply* of *desirable apples* and *pears*—receipts of common and poor stock prevailing and pressing for sale, while strictly *choice high colored eating fruit* is *scarce* and *readily salable* at *top quotations*:—

Blush apples, Gravensteins, etc., $3.00 to $3.50 bbl.; Snow, $2.75 to $3.25 bbl.; 20 oz. Bellefleur, etc., $2.50 to $3 00 bbl.; Pippins, $2.00 to $2.50 bbl.; Mixed, common, $1.00 to $2.00 bbl.

Fancy bright Bartlett pears, $6.00 to $7.00 bbl., other kinds and grades, $3.00 to $4.00 bbl.

Plums 30c. to 75c. per 6 qt. basket, according to quality.

Grapes are in light demand and dull, at 25c to 35c. per 10 lbs. for Concords and 40c. to 60c. for Delawares and Niagaras.

Whenever we can serve you please to order us. PANCOAST & GRIFFITHS, *11th Sept*, 1889.

OUR BOOK TABLE.

REPORT OF THE COMMISSIONER OF AGRICULTURE OF THE UNITED STATES FOR THE YEAR 1889, WITH COMPLIMENTS OF J. M. RUSK, SECRETARY.

This report covers over 700 pages and includes much that is of interest to the fruit grower.

THE PLUM CURCULIO,

for instance, is fully described and illustrated in its various stages of growth and operations upon the cherry and plum. The various plans for combatting it are described, and the one of spraying with Paris Green commended as a desirable addition to the list, though not likely to become as great a success as in the case of the codling moth, because (1) the beetle prefers to work upon the smooth cheek of the plum where the poison is less likely to adhere, and (2) because the larvæ, eating directly from the flap, does not come in contact with the poison as does the larvæ of the codling moth

It is evident from this statement that the writer has no idea of poisoning the mother moth before she deposits her eggs, the possibility of which was demonstrated on page 38 of the present volume of this journal It is evident that much of the failure to save the plum crop by spraying has resulted from an ignorance of the fact that the curculio will eat the foliage of the plum tree, and consequently the poison was applied too late to accomplish the best results.

Many of the fungi are fully described, such as Potato Rot, Black Rot of the Tomato, Brown Rot of the Cherry, Leaf

Blight and cracking of the Pear, Apple Rusts, etc. In speaking of the best

NEW FRUITS

Mr. Van Deman recommends the *Jeffries* as the choicest early apple known to him; a chance seedling from Pennsylvania. It is medium in size, skin smooth, yellow, profusely covered wfth carmine stripes and crimson splashes. Season, August and September in the middle states.

Of pears, he speaks favorably of the *Wilder*, a small pear of excellent quality, which originated in New York State, and which ripens in August in that state. Of the *Idaho* he says it is of real value, and recommends it for extensive trial. He describes this pear as follows:—"Size of fruit, 4 to 4½ inches in diameter; shape, a little flattened, tapering slightly both ways from the centre, quite irregular, depressed at the stem; surface rough and uneven, yellow or straw color, with a faint blush or brownish red on the sunny side, and a few bronzed blotches; dots minute and dark and very numerous; basin, deep, flaring, very irregular or ribbed, and thickly covered with fine brown dots; cavity, medium abrupt, irregular; stem, stout and rather long; core very small; seeds few; flesh, almost white, fine grained, buttery, melting, lacks the grit so often found in pears; flavor, sweet to mild sub-acid, rich and aromatic, juicy; quality, very good; season, September in Idaho.

The book is well illustrated with expensive colored plates, illustrating the subjects treated of, and is a volume well worthy of preservation for future reference.

TRANSACTIONS OF THE IOWA HORTICULTURAL SOCIETY for 1888. Secretary, Geo. Van Houten, Lennox, Iowa. A volume of 494 pages, with many interesting papers and discussions, from which we hope to draw material for the benefit of our readers.

PROCEEDINGS OF THE FOURTEENTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF NURSERYMEN held at Chicago, 1889. Chas. Green, Rochester, Secretary. This Report of 114 pages proves this Association to be a live body. The interests of the nurseryman and the fruit grower are more closely allied than some seem willing to admit, and their presence and aid in our discussions are almost indispensable.

NOVA SCOTIA PROVINCIAL CROP REPORT, July, 1889. This crop report does not pretend to the exactitude of a census, but is intended to give the public immediate and valuable information concerning the crops at a time when it would be most useful, leaving it for the census to give complete and exact returns of the actual crop harvested. Of Annapolis county, one of the principal apple growing regions, for instance, this Report gives the quality of the winter fruit about an average of former years, but the quantity about 50 per cent. of the usual average. Kings and Gravenstein, however, promised a full crop.

T. C. ROBINSON'S Fall Catalogue and Price List of Small Fruits, Grapevines, Fruit Trees, and Selected Ornamental Shrubs, Owen Sound, Ont,

WILLIAM BROTHER'S TROPICAL SEED CATALOGUE, for Planters, Agriculturists, Horticulturists, Nurserymen, Seedsmen and Florists in all parts of the world. Heneratgoda, Ceylon.

THE

Canadian Horticulturist

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THE WEALTHY APPLE.

ALTHOUGH a comparatively new apple, the Wealthy, on account of its beauty, productiveness and hardiness, has become quite famous. In 1874, according to the Report of the Minnesota State Horticultural Society of that year, it was a question in its native State whether this then new variety should be recommended for general cultivation or not, and probably very little was known about the apple, save by a few fruit-growers living about Excelsior; now it is widely distributed, and in the catalogue of the American Pomological Society it is double starred, as being commended for special excellence, by the Province of New Brunswick, and the States of Minnesota, Dakota, Iowa and Colorado.

The honor of originating this apple belongs to Peter Gideon, of Excelsior, Minnesota, who grew it from seeds of the Siberian Crab carried there by him from the State of Maine.

Our colored plate of this apple is claimed by the artists to be an exact representation of a carefully selected specimen grown in Pennsylvania; but fearing that it was an exaggeration, we had rejected the plate, until we had secured samples of the Wealthy from various parts of Ontario. Particularly fine specimens were sent us by Mr. A. M. Smith of St. Catharines, and by Mr. A. A. Wright, of Renfrew. Of these the former were the best in color, but only medium in size; while the latter, though grown so far north, were much the largest; one of them measuring about twelve inches in circumference, and so nearly the size of the one pourtrayed in this plate that we have concluded to use it. No doubt it is better, as a rule, to represent fruits according to their average size, instead of choosing out the very finest samples, and that course will be generally pursued by this journal, as our interests are wholly on the side of the fruit-growers; and yet by seeing the possibilities in our line, we may be led to inquire the reason of our own failures to produce the same, and be stimulated into greater diligence in

the cultivation of our own orchards and gardens.

In general, the Wealthy may be described as follows:—*Form*, medium sized, oblate, or roundish-oblate; *color*, whitish yellow ground, shaded with deep rich crimson in the sun, with obscure broken stripes and mottlings in the shade, sometimes entirely covered with crimson; *flesh*, white, fine grained, stained with red, tender, juicy, sub-acid, with a small core; *quality*, very good; *season*, early winter, keeping, under favorable circumstances, until the last of February. The *tree* is a fair grower, and the foliage handsome.

On account of its great beauty, perfectly clear skin, and excellence as a dessert apple, the Wealthy is worthy of commendation for planting in Southern Ontario in place of the Fameuse, which has become worthless through scab, a disease rapidly gaining ground among our very best varieties. How profitable an orchard would be, if planted with such varieties as Astracan, Duchess, Gravenstein, Cranberry Pippin, King and Wealthy,—all fancy apples, clear of this troublesome scab and commanding the very highest prices in both our home and foreign markets.

One of the special points of excellence about the Wealthy is its hardiness. Its only lack in this respect is a certain amount of unsoundness, or blight, in the trunk. This fault is complained of by Dr. Hoskins, of Vermont, a gentleman of large experience with the so called iron-clad apples, and also by Mr. Shepherd, of Montreal, a prominent member of the Quebec Fruit Growers' Association, who complains that out of sixty trees of this variety, planted ten years ago, he has lost twenty through this disease. To overcome this trouble it is recommended that the Wealthy be top grafted upon some iron-clad stock, such as the Tetofsky, which is not subject to it. Barring this, the Wealthy is classed among the hardiest and most desirable kinds to plant in our cold north. Mr. A. A. Wright, an ex-director of our Association living at Renfrew, where the thermometer frequently sinks to 40° below zero in mid-winter, grows the Wealthy with great success. He writes "Plant any number of Wealthies." Mr. J. M. Fisk, of the Montreal Horticultural Society, classes it for hardiness with Haas, the Peach, and the Winter St. Lawrence.

The Wealthy apple has one other fault, which we must not fail to note, and that is the early dropping of the fruit. This begins in the latitude of New York as early as the month of August, and for this reason it is sometimes classed as a fall apple, especially in New York State, where the Fameuse is also so classed, but, grown farther north, it may be ranked as an early winter apple.

SEASONABLE HINTS FOR FRUIT GROWERS.

WINTER PROTECTION.

IN our report for 1888, page 15, some reference is made to the protection of raspberry bushes; and the mode that is practised in the Ottawa valley is described. The canes are allowed to grow as long as possible without cutting back, in order that they may be easily bent to the ground and held down with sods or a long pole or rail, laid over the tops in such a way that the snow will collect over them and afford a perfect protection. The objection we would have to this mode of training lies in the difficulty of cultivation with such long sprawling arms, and the loss of bearing wood which must result from cutting them in the spring. In the Wisconsin State Horticultural Society's Report we find another plan recommended which appears to be preferable for cold sections, and give the extract describing it, with an illustration which helps to make it plain.

The Ripon people have been very successful in the practice of laying Raspberry and Blackberry bushes down for winter protection. Their way of laying them down is by the help of a plow, which is run close alongside the row, the dirt being thrown away from the row. The surplus wood is removed from the bushes.

A man follows the plow with a spade and after loosening up the earth about the roots on the side towards the furrow he pushes the plants down and covers the top with earth. The roots are like ropes and will not break. Mr. Plumb thinks that this is the most economical way of protecting Blackberries. Mr. Stone's great success with Blackberries was accomplished on poor land. The manure and the cultivation were applied early in the season, and in that way strong canes were secured before winter. He thinks we should take the best protection for the bushes that we can get. The plowing between the rows does not materially increase the number of suckers. The plowing may be done as near as possible to the bush and no injury will result.

Mr. Tuttle stated that his Blackberries had been killed above ground

FIG. 75.—PROTECTION OF BLACKBERRIES.

last winter, owing to their not being protected. Mr. Hoxie was opposed to the State Society any longer giving countenance to the assertion that the Snyder and Stone's Hardy blackberries will do without protection. Mr. Plumb stated that he advised a neighbor, who was planting a patch of Blackberries, to keep them cut back to one foot. The neighbor kept them cut below two feet, and they proved a success. Mr. Tuttle stated that he had tried the same plan but met with no success. Mr. Jeffries had pinched the Stone's Hardy back,

but had not protected, it, and it had been killed.

The great importance of winter protection of strawberry plants is so well known to all growers and so often preached up by Horticultural writers that it is hardly worth while to emphasise it here, except to say that it is unnecessary to apply any covering before the ground has frozen, as the danger is in the constant succession of freezing and thawing, which often kills the fruit buds, and a good many of the plants themselves. Any loose covering will answer, such as straw, cornstalks or evergreen boughs; and any small fruit grower who has these materials in store and can spare them for the purpose, is losing money if he neglect the application.

VARIETIES OF FRUIT TRUE TO NAME.

In buying trees or plants for planting, it is wise to use every precaution to obtain them true to name. In nothing is it easier to be imposed upon than in this, and it is a very vexatious thing after waiting years for the fruit of an apple tree to find that it is some worthless kind, instead of the variety ordered. In the days when farmers knew little and cared less about the kinds which were best to plant, it was, perhaps, allowable to leave it to the judgment of the nurserymen, but now that through the reports of the Ontario F. G. Association, people know so well which varieties are most valuable, there is no excuse for those words which so often appear in the agent's order book, "If you have not the kinds ordered, please substitute some others equally good." The writer once planted eighty trees for Duchess of Oldenburg, and his disgust can be imagined, when, on their coming into bearing, they proved to be eighty Cabashea, a most unprofitable variety. Determined that he would secure the famous Duchess, he employed an experienced grafter, to top graft that variety, and lo! when they came to bear, they proved to be King o Tompkins, a good enough apple, but not what was wanted. He finally resolved to top graft the trees himself with Duchess, and lives in hopes of the correct thing some day.

It is very important that fruits exhibited at our fairs should be correctly named, for these exhibitions are the very best means of obtaining correct nomenclature throughout our country. To secure this end, only the best qualified men should be employed as judges, men able to correct misnomers for exhibitors. Better have one capable judge than three incapables. We are just in receipt of a Buffum pear for name, which the reader says has taken a prize for Beurre D'Anjou; and here is a clip from the *Orillia Packet* which explains itself.

Mr. Henry Overend, of Medonte, thinks he has got rather hard measure from differing judges at the East Simcoe Shows. Last year, he showed "Twenty Ounce Pippins," and was refused a prize because they were wrongly named, one of the judges stating that they were "Gravenstein." This year he was again disqualified, because he called them "Gravenstein" instead of "Twenty Ounce Pippins."

LIGHT FROM THE EXPERIMENT STATIONS.

SUCCESS IN PREVENTING THE INJURIES OF THE PLUM CURCULIO.

THE wisdom of organizing the various Experiment Stations in the States and Provinces is becoming daily more and more apparent. A subscriber, living in the Ottawa valley, writes that already the Experimental farm is giving a fresh impetus to fruit culture in that district, by showing what the possibilities in that latitude are. The scientific and the practical have been too long separated, and now, through these institutions, a union is being effected that promises to be of the greatest benefit to the farmers and fruit growers of the land.

In the Report of the Ohio Experiment Station, for 1888, we find the result of the most careful experiment with arsenites in preventing the injuries of the plum curculio, by Mr. C. Weed, the Entomologist. A young orchard of seventy-five cherry trees was divided into two parts, and one part carefully sprayed with London purple just after the fall of the blossoms, and again after rains; and a careful estimate of the result was made. It was fully demonstrated that, of the fruit on the sprayed portion that was liable to injury, 75 per cent. was saved by the treatment. When the fruit was ripe, it was subjected to the most careful chemical examination, and not the least trace of arsenic could be detected. It was, therefore, concluded that there could not be the east danger to health where the spraying was done at least three or four weeks before the time of ripening. Experiments with plum trees were also successful in giving, as a result, a heavy crop of fruit, while on trees not sprayed a large proportion were injured. Equal success seems to have attended spraying with lime; trees, on which the fruit was coated with lime, matured an immense crop of fruit.

Experiments with pear trees also resulted in a large crop of perfect fruit, free from injury by either the curculio or the codling moth. Even better results were brought about by adding, to the usual London purple mixture, fresh air-slacked lime, in the proportion of a half-peck to a barrel of the solution, and with less injury to the foliage. It should be observed that the good effects of the arsenites consists in killing the parent insect, while that of the lime simply in driving it away.

THE ROSE-BEETLE.

In the eastern and middle states, immense amount of injury has been done to grapes, peaches and other fruits by this beetle, and no remedy except hand-picking has been so far known, until last summer, when in response to an inquirer, Prof. Weed, of the Ohio Experiment Station, recommended a trial of a liberal spraying with lime, a regular white-washing. The result was so successful that we quote from a letter of Mr. Dunbar, the experimenter. He said,—"A thorough application of the remedy devised by you was no doubt the means of saving me many dollars' worth of fruit, for which result I feel

profoundly grateful." Bugs appeared this year about June 12th. One application of a coal oil emulsion to a few grape-vines and rose-bushes killed most of the bugs which were there, but others soon came—remedy of no use. I then mounted my field force-pump on a forty gallon cask, set on a stone-boat. I slacked about a peck of lime for each barrel, and the motion of the stone-boat kept the lime in suspension. We soon had the vineyard thoroughly whitewashed, and well on to the fruit and under the leaves. I was disappointed at first in the apparent results, as the bugs continued to be quite numerous, but after a few days they cleared out, having hurt the grapes very little.

Finding the bugs injuring his peaches, he says; "I at once whitewashed the peach orchard in the same manner as the vineyard, with the exception of the west row, and the bugs all emigrated to that row in the course of a day or two."

So far the rose-beetle has done very little injury in Ontario, but it has appeared in some parts, and the knowledge of this remedy may prove useful before long.

A VISIT TO THE PRESIDENT'S HOME AT GODERICH.

By T. H. Race.

GODERICH is a town of about four thousand inhabitants, situated on a light sandy plateau, overlooking Lake Huron at an altitude of about 125 feet above the lake level. Though somewhat north of the latitude of Toronto, Goderich is situated in a section of country long noted for its fine and extensive fruit production. Not only in apples does the Goderich section excel, but as well in the choicer fruits, such as pears, plums, strawberries, etc. Approaching the town from the east, by the Grand Trunk Railway, one comes to the height of land, or what is known as a continuation of the Niagara escarpment, about four miles from Lake Huron. From this ridge the land gradually recedes to the westward till it terminates at the lake in a high bluff, averaging one hundred feet above the water. The section lying between this height of land and the lake is what is known as the fruit-belt, where the late spring and early fall frosts, so fatal to fruit to the east of the ridge, seems to have comparatively little effect. Why this narrow strip of land should enjoy comparative immunity from these blighting frosts, I will not presume here to explain, suffice it to say that the cause is well understood in natural physics.

Having accepted an invitation from our President, Mr. A. McD Allan, to visit the Great North-Western Exhibition, held at Goderich, on the 17th and 18th, and 19th inst., I was not only surprised at, but greatly pleased with the splendid fruit exhibit, embracing all the standard varieties of apples and the choicer

varieties of pears, plums, indoor and outdoor grapes. For variety and quality the pear and plum exhibit surpassed that at the Provincial in London, and I doubt if, even in a favorable year, there is another section in Ontario that could produce such splendid samples of the Pond's Seedling, Victoria, Coes Golden Drop and Washington plums, as were on Exhibition at Goderich; the first mentioned seeming to me more especially suited to the peculiar conditions of the section than to any other locality where I have seen it grown. But even this favoured section suffered to a greater or less degree from the terrible frosts of last May; and not only did the grape exhibit bear evidence of it, but it was a common remark that all the apples shown were lacking in color, as if grown only in sheltered parts of the trees.

The home of our President is situated in the southern suburb of the town, his residence being of brick, spacious and inviting from its outward homelike attractions, surrounded by premises two acres in extent. The grounds, immediately about the house, are neatly laid out in lawn and flower-beds and separated from the fruit garden and orchard by a well-kept evergreen hedge. The soil, at best, is not conducive to a rank growth of wood in either vine or bush and the terrible drought had told all the more severely on the well-cared for grape vines, and on the somewhat stunted raspberry, gooseberry and currant bushes. Pear trees were found on every hand well-loaded with ripening fruit; and the apple trees, numbering about a hundred, showed great care and thriftiness, being washed and scraped as smooth as a white beech. Being first shown through the premises by the children, it was not only a pleasure but a delight to find that every one of them was an enthusiast in fruit and flower culture, and the little chaps of five and seven years could name you every variety of pear or apple tree in the orchard as we came to them. But the pleasure of the visit was not all in the inspection of the outer premises. The generous and inviting hospitality of the household, the warm and genial disposition of the Fruit King in his own home, together with the cordial greeting, tendered you with such a natural and easy grace by his amiable wife, all combined to make you feel that you were a welcome guest; and you carry away with you only the most pleasing recollections of a most pleasant visit.

MITCHELL, *Sept.* 21*st*, 1889.

GOOSEBERRY MILDEW REMEDY.

SIR,—As Mr. Race has a rather positive opinion on the Gooseberry Mildew, and as it is a subject of some importance I write this that others may not be led astray by his very plausible theory. My opinion, backed by experience, is entirely at variance with his. The factors in the mode of cultivation are about the same; our soil is similar, he allows plenty of air and sunshine along with a supply of hardwood ashes, and so do I. The only point in which we differ in the two items is, that I give the ashes

every year, he once in two years. He claims success in the highest degree, I can claim ditto in this respect. In fact no one in this part but will give me the palm in this line. From Mr. Race's remarks, three years seems to be the length of time he has been cultivating the varieties he writes about. Now Mr. Editor, I contend that three years is too short a date for Mr. Race to prove his theory to be correct Two years ago I might have written his article with as much confidence as he and still I would have been wrong. Before that time I did not know what mildew was. I have cultivated the Whitsmith for eight years, the Industry for three and I find the latter is very prone to mildew. The former runs a good chance of escaping five out of seven years. I will state what I believe to be the cause of mildew, and that is by heavy rains followed by hot sunshine. I will give a few facts in support of this. In the early part of this season, after the heavy rains, the bushes on the highest part of my plot were effected all of ten days before those of the lower part which were shaded by a high board fence. I enquired from six different persons, who got bushels of the Whitsmiths from me, if they had any mildew; only one of them had any, and that was on the highest part of the land, the shaded part escaping. Another of the number, whose garden I visited often and which is very much shaded, was entirely free from it. I account for mine being affected with it so much by the extra quantity of ashes with the rain stimulating the roots to great activity, causing rapid growth in the young wood, while old Sol's rays started fermentation. Mr Race talks of Nature's method, but I am inclined to think if he were to visit the woods and see how much the gooseberry was shaded in its native home he might come to think, after all, he was not following nature so very closely. With all respect to Mr. Race and his theory (which goes to show he is a thinking person), I humbly beg to differ from him for the reasons given, and I think time and observation will prove who is correct. After trying various methods to stay its ravages, I eventually succeeded. The process was simple and inexpensive, but as I expect to make something from it I withhold it for the present. Thanking you for absorbing so much of your needed space.—F. W. Porter, *Mount Forest, Sept. 23rd*, 1889.

Sir,—Having seen in Sept. No. of Canadian Horticulturist a reference in August No. of a prevention of mildew on gooseberries. But as I did not receive August No., although enquired for several times at P. O. I did not see the article in question. But there is an article in Sept. No. from T. H. Race, Mitchell. Can you or Mr. Race kindly inform me how much ashes I could with safety use on sandy soil, as I have some eighty bushels of Whitsmiths, and they have mildewed for three years. I am anxious to know what will prevent it.—John Clements, *Brantford, Ont.*

Facts are stubborn things, and we are always glad to chronicle them, especially when observed by practical gardeners like Mr. Porter. Still we fail to see any connection between the use of ashes and mildew, either in producing it, or in remedying it, except that by promoting a vigorous growth, more power of resistance is imparted to the plant.

The disease known as mildew is really due to a faugus parasite, similar to the powdery mildew of the grape, the spores of which are carried in the air, and, lighting upon a suitable host-plant, proceed to grow under favorable conditions, as moisture for germination, and afterwards dry hot weather for rapid growth.

These conditions prevail in our Canadian climate, and this explains why the mildew is so much more wide-spread here than in England, where the continuance of moist and cool weather is unfavorable for its growth. As the parasites are external, they may be destroyed without much injury to the bushes, and the remedy that has been most commended in the past is the application of the flowers of sulphur. This should be applied as soon as the first leaves are fully formed, and repeated every ten days during the growing season.

Prof. J. C. Arthur, State Botanist of Indiana, has been experimenting with potassium sulphide (liver of sulphur) in solution, at the rate of

one-half and one-fourth ounce to the gallon, respectively, commencing May 3rd, or as soon as the leaves had begun to expand; and the application was repeated after every hard rain until June 24th, nine sprayings having been made in all. The experiment was made upon a row of the Industry Gooseberry containing five plants, and upon a plat of seedlings numbering 282 plants.

Toward midsummer the effect of the spraying became distinctly visible in the deeper green foliage and more rapid growth of the treated plants. On June 23rd, the two plants of the Industry Gooseberry that received the sprayings were noted as being entirely free from mildew with the exception of a trace of it observed on a single fruit, while the three not treated were badly affected. The fungus appeared as a downy coating near the ends of the new shoots, and also upon the berries. The new growth, as well as the crop of fruit, was very perceptibly greater on the treated plants.

In the latter part of summer, after the spraying had been discontinued, the mildew increased on the treated plants, showing clearly that the applications were beneficial, and also that they must be continued throughout the growing season to confer their greatest benefit.—EDITOR.

THE NEW STRAWBERRIES.

BY JOHN LITTLE, GRANTON, ONT.

AS I have been requested, since the close of the strawberry season, by not a few, to give my experience how the new varieties have done on my ground, I will do so in as brief a space as possible.

I have all the *old varieties* with the exception of a few discarded, viz:—Cumberland, Mt. Vernon, Manchester, Crescent, Capt. Jack, and a few Wilson.

1. I still admire the *Jessie*; it is so large, good, attractive and productive, that I still head the list with it.

2. *Eureka.*—I have fruited this variety for four years and I am still well pleased with it. Plant vigorous, strong, without any blemish; fruit, large and abundant, more profitable here than the Crescent in its palmiest days.

3. *Bubach* is a wonderful berry and succeeds everywhere. For near market it cannot be surpassed. It is popular too, and all should plant it.

4. *Summit.*—Berries large and late: it does as well here as usual; it is a favorite here on account of its size and flavor and lateness.

5. *Ohio.* It is a pity this berry is not a little larger; it is so productive, it stands up so well, is of such a bright color and very productive. We had berries from it a week later than Gandy's Prize.

1. *Haverland*, of the *newer varieties*, is very productive. I do not think I ever fruited a variety

giving more or larger berries, but it would not ship to a distant market.

2. *Logan.*—I must not forget this, though it is of earlier origin than the former. It is one of the most attractive berries we grow here. Its size, color and productiveness makes it valuable.

3. *Warfield* I have not fruited. It is a grand plant and from what I hear and read about it, it will drive the Crescent from the field.

This season after the berry-picking was over it became so dry and 'hot' that plant growth was kept at a standstill; but, since the late rain, they are making up for lost time.

If spared I will fruit more 'new varieties' next year, than on any former one since I began growing the strawberry. I am indebted to Mr. Crawford and Mr. F. Thompson, of the Cleveland Nursery Co., for what I have—no doubt many of them are valuable; also some from Mr. Townsend, the originator of Eureka, and Mr. Cleveland.

From Mr. Crawford: Saltillo, Ivanhoe, Lower, Marvell, Martha, Viola, Osceola and others.

From Mr. F. Thompson: Florence, Clingto, Bubach 132 + 24, and seven varieties of his seedlings.

From Mr. Townsend: seven seedling varieties.

From Mr. L. J. Farmer: eight varieties, seedlings.

Also a number from London, which I have fruited and not a bad one among them. To these I must add *Miami;* which the originator claims is the best variety in the world; also Stayman's No. 1, and last, but not the worst, *Shaw*, the plant that *bore* the eight berries, that filled a quart basket.

Don't you think, sir, that I have varieties enough to keep one man's attention pretty busy?

Oct. 9th, 1889.

THE CONDITIONS FOR LONG-KEEPING OF FRUIT.

IN what condition can fruit be placed to best preserve its good qualities and retard its decay? There seems to be two distinct active processes in the growth and development of fruit. The first is the growth —the collecting and building up of a compound of comparatively solid structure which is unpalatable and indigestible as an article of food. The second is the ripening process; a kind of organic ferment; a breaking down, softening, dissolving, rendering palatable, easily digested and valuable as food. In this change the volatile oils are generated, giving flavor and character to fruit. The time required in building up fruit preparatory to ripening has not been delegated to man to control to any great extent, whether a variety is to ripen in May, July or September. Yet if man cannot control the time of completed growth, he can, during this period, by good care and cultivation, increase greatly its size and value.

In the second stage of development ripening can be hastened or retarded, and when fully ripe, decay can be delayed. In the second stage fruit should not be left opened and exposed to atmospheric changes of temperature or moisture. Flavor is lost by evaporation. If the purpose is to hasten ripening, the fruit should be inclosed in a tight box or barrel, or wrapped in flannel, to prevent evaporation, and left in a warm room of uniform temperature.

The greatest advantage to the fruitgrower will result from checking too early maturity, and from preventing early decay after harvesting. His success demands a place for storage, with surroundings favorable for preservation. One condition is conceded by all—that the temperature, must be lower than that required for growth. That 32° is too low, seems to be the conclusion of those best qualified to judge. Fruit kept long at that temperature, although apparently unchanged, when removed soon sinks to decay, not apparently from over-ripeness, but from the permanent suspension of all active forces. The process of decay, not that of ripening, takes possession. California shippers of oranges have come to the conclusion that refrigerator cars do not pay; in fact that they have occasioned great loss. It seems that the conditions most favorable for the preservation of fruit without loss in quality would be secured by a store-room, having the temperature so low as to check (not wholly destroy) the forces at work in fruit, whether these forces be chemical or organic,—so low that spores would not be active; the air so damp that moisture would not escape, while the temperature and moisture should remain uniform. Apples, as well as potatoes, buried in the ground and so covered as to be protected from heat and frost, come out in the spring as fresh and bright as when buried in the fall.

Grapes, picked and wilted, then buried in stone jars three to four feet below the surface, will come out with stems green and fruit plump and bright. In these two cases the temperature remains more uniform than could result with atmospheric exposure. Cellars having springs in them or streams passing through them are noted for keeping apples and vegetables fresh, even until late the next season. The water acts as a regulator of both temperature and moisture. These methods of storage approach the conditions specified above, and the nearer the approach the better the result.

If these conditions are favorable for the preservation of fruit in all its stages of ripeness, the question arises: How may they be the best and most economically secured? The cream-

eries and milkrooms, now in use in the Western States, present the most satisfactory solution of the problem, as in them the above conditions are economically realized in their most perfect form. These rooms are inclosed on the top, bottom and sides with four dead air spaces, with double doors for entrance, and they are made as nearly air-tight as possible. Fresh air is supplied at the bottom through a subterranean passage about twelve rods long and eight to ten feet below the surface of the earth. This passage is two feet wide and one foot high, formed of stonework. Through it a constant current of air is passing into the room. The temperature of this air is controlled and regulated by that of the earth at the depth of the passage. Moisture is deposited if the temperature is increased, so as to give nearly a uniform amount in the room.

Prof. Arnold is authority for saying that while the extremes of heat and cold in these States vary from 110° above to 40° below, these rooms will not vary in temperature over five degrees during the year, uniformly remaining near 50°. The air is pure, and the room is perfect as a milk-room. Ventilation is perfect, with uniform temperature and moisture.

Such a building need not be expensive. It can be built of coarse lumber, the air spaces sheeted with building paper, while the stone passage can be put down for from five to eight dollars per rod, depending upon the hardness of the soil and the proximity of stone. We have no knowledge that any such appliance has been used for keeping fruits and vegetables, but it seems to present just the conditions necessary for retaining every valuable quality in fruits and in vegetables, and for checking decay.—*Am. Agriculturist.*

EVAPORATING FRUIT.

Advantages of an Evaporator.

I HOLD that every fruit-grower, no matter how large or how small, should have an evaporator of sufficient capacity to work up all of his second-class fruit of every kind—apples, peaches or berries, and sell nothing in a fresh or green state except strictly choice fruit—evaporate everything else. By pursuing this course, you will sometimes realize more from your culls than you will from your choicest fruit. For instance, two years ago, I received for my picked apples 33 cents per bushel and evaporated my culls, which, after counting out cost of evaporating, netted me 40 cents per bushel—7 cents more than my best apples brought me. You may ask why I did not evaporate all. Well, for two reasons:—1st. I did not know that I would receive so much for them. 2nd. If I had known it, my evaporator was not large enough. Last season I put up a new evaporator and prepared nearly 8,000 pounds of choice fruit and sold most of it at home for 10 cents per pound. One lot I shipped to Colorado brought me 11½ cents after paying freight. None of the fruit worked up would have been marketable in any other way, and would have been mostly wasted, but for the evaporator.

Another advantage in having an evaporator, is that you will have a finer lot of shipping fruit, you can afford to cull closer and will do it, when the culls will bring you very nearly, if not fully as much, thrown out, as they would thrown in, and you will, therefore, have a fruit package of a fancy quality, which will bring you more money. So you not only sell your culls for a good price, but receive more for all your fruit.

In seasons of full crops and dull markets, when prices are demoralized and fruit will bring scarcely enough to pay freight and packing, evaporate all, and pack in new clean packages, either barrels or fifty-pound boxes, and you can store them away until the market revives. If properly dried and put up, they will keep for any length of time. We are now using some we put up four years ago, and they are just as good as new. Great care should be taken in preparing the fruit for the evaporator, to thoroughly trim off all specked or bruised spots before placing in the evaporator, so that your fruit will have an even look. The price of evaporated fruit is now more per pound than any other farm product, and raspberries and pared peaches are worth more than any other food product from anywhere.

Where there is a market for cider, a good cider mill can be used to good advantage in connection with the evaporator. There are a great many apples that are too small to pare and prepare for the evaporator, and these, with the cores and peelings, can be made into cider and thereby save everything. It is not what we make that makes us rich, but what we save; so save all the apples and turn them into money.

With the Eureka parer, a good active boy can pare and slice from fifty to seventy-five bushels per day; so that preparing the fruit for the evaporator is not the task that it would be with the old style apple parer.

In speaking of using the culls, I do not wish to be understood to mean green, wilty or tough fruit, but fruit that is fully matured and well ripened, and is first-class in quality; bruises, rotten specks or wormy defects must all be cut off before dried. Nothing will injure the sale of your fruit so much as to use an inferior quality, such as green or wilty fruit that is tough and leathery.—J. B. Durand, *in Report of Missouri State Horticultural Society.*

Money in Evaporated Fruit.

There are four conditions on which depend success in the evaporating business: Stock, help, experience and markets. I would not paint a high-colored picture of financial certainties attending the evaporating business, but the possibilities and the probabilities are such as to warrant careful attention. I could figure out marvelous results, but shall merely give the lessons which I have learned in the business. The first year I used an evaporator, I paid an average of 35c. per bushel for apples. My fruit boxed and ready to ship cost me 10½c. per pound, and I received an average of 18c. This same fruit retailed at 25 to 30c. The net results of that season's work furnish a very pleasant paragraph in my financial history. What is true in all lines of business is true here. The more business is done the cheaper is the work accomplished.

My average cost of evaporating and boxing has been 3c. per pound. The rule for fuel is about one pound of coal to every pound of dried fruit. Even the cores, skins and trimmings are saved. Nearly one half of the apple goes into waste in this shape. I have nearly always dried this waste when not overrun with good fruit that was decaying, and it has paid my coal bill and sometimes a little more. It brings 1½ to 3½c. per pound. The principal market is Philadelphia, where it is made the basis for all kinds of jellies. Hereafter, when enjoying kinds of pineapple jelly, you may know that it is made from the waste of some apple factory. These parings are usually dried at night and require but little care. Cider made from this waste, if pressed out immediatly, cannot be distinguished from that made of whole apples.

The paring may be done by hand or power, according to circumstances. There are machines adapted to both methods. The hand parer used in the factories has a capacity of 25 to

40 bushels per day of 10 hours, according to the size of the apples and the expertness of the operator. The most economical speed is 25 bushels. A higher speed throws the fruit and makes considerable waste. The best power, aside from steam, is a wide-awake boy about 15 years old. The price paid is usually 2½ c. per bushel. I have not yet found a perfect parer, nor one that will stand through a season without constant repairing. Most machines in use pare, core and slice at one operation. Some machines pare and core only, the slicing being done by a second hand. This is more saving in fruit. Punched fruit, or apples punched to remove the core are not worth so much into 1 or 2c., as a great deal of the core is left in the apple.

As soon as the apple is pared the trimmer (usually a woman, as she will handle the apple quicker and be more particular to remove all the skin left by the parer than a man would be) cuts out any specks or other imperfection and separates the slices. Two women are needed to each paring machine and do 25 bushels or more per day. The average pay is 70c. per day.

The bleacher is a tight box about five feet high, three feet deep and two wide, connected with the chimney by a pipe. In the bottom is a vessel in which sulphur or powdered brimstone is burned. The apple is placed on trays, fitted to this box, and allowed to remain in the fumes of the brimstone two to four minutes. There is an ungrounded opposition among some people to evaporated fruit because of this process. The term "bleaching" is misleading. The apple is merely exposed to the fumes to prevent it from turning dark. This gives the apple its white, pleasing appearance by simply stoping the process of rusting, as when dried, fruit that is properly bleached will not show the least taint of brimtone. The main point in bleaching is to get the fresh fruit into the bleacher as soon as possible after it is pared. Some use salt water but the fruit always tastes of the salt. After bleaching, the apples retain their color and can be kept hours before drying.

When removed from the bleacher the fruit is spread upon trays made of wire or cloth and placed in the dryer. In some evaporators it is necessary to lay each slice separately upon the tray, which is quite a task; in others the fruit may be put upon the trays two or three layers deep, the different internal arrangement of dryers necessitating these different modes of preparation. The evaporator is a tower four to six feet square, 15 to 30 feet high, placed over a furnace. In this tower are the elevating machinery, dampers, etc., etc. The fruit is placed directly over the furnace, which should show 225 to 250°, and allowed to remain for five or ten minutes. It is then raised and another tray inserted and so on continuously through the day and night. With proper heat and a favorable day the fruit should be ready to come out in 2½ or three hours. Great care and considerable experience are necessary to know just when the apple is ready to be taken out. In my first experience, and the first experience of nearly every one, the fruit gets too dry and consequently loses very much in weight, besides lessening the nutritive quality of the apple. It ought to feel like a buckskin, not dry nor moist, but soft and velvety.

When taken from the dryer the apple is spread upon the floor in a darkened room. It should remain here for two or three days and should be thoroughly mixed daily. This allows all the heat to escape and the fruit to become equally moist throughout. It is what we call "sweating." Some of the slices will come out of the dryer quite crisp, others perhaps quite moist and by mixing upon the

floor for a day or two the moisture becomes evened up, and one cannot tell which was the crisp and which the moist apple. The favorite package is a box holding two cubic feet. One side is faced with large white slices. The fruit should all be put into the case with the hands and great care taken to remove all seeds and everything you would not care to find in your pie or sauce. It does not require much capital to begin the business even on quite an extensive scale, as dryers can be purchased for part cash, and commission merchants stand ready to advance money on your fruit.—*C. A. Wilcomb, in Farm and Home.*

New or Little Known Fruits.

The Pearl Gooseberry.

On Saturday, the 3rd of August, the writer in company with Mr. Leavenworth, the editor of the St. Catharines *News*, and Mr. Parnell, a member of our Association, responded to an invitation from Mr. A. M. Smith to visit his fruit grounds, and see a new gooseberry. A drive of three miles from St. Catharines brought us to Port Dalhousie, where, near the shores of Lake Ontario, Mr. Smith has some thirty acres devoted to peaches, pears and small fruits.

The Pearl is a gooseberry grown from the seed of Houghton crossed with Whitesmith, by Prof. Wm. Saunders, and worthy of special notice because, (1) of its good quality, (2) its size, (3) its productiveness, (4) its freedom from mildew. So far we have only the Houghton, Smith's Improved and Downing, which are proved to be mildew proof, although the Conn (or Autocrat) has not been known to mildew as yet, and in most cases the Industry is free from the fungus.

Now, with reference to these points, we will give the result of our observations. The quality is good, very like the Downing in this respect, as well as in color and marking; but in size, it averages nearly double that berry, and that in spite of the prodigious crop under which the bushes were laden. There was a row of some fifty or sixty fine bushes, two years planted; and most of them were literally bent to the ground with heaps of fruit. The average was about eight berries per inch of wood, and on one bush we estimated that there must have been at least 1,500 berries. We have had great loads upon the Smith, the Downing and the King Conn (or Autocrat) on our own grounds, but we have not seen quantity of fruit upon the bushes of any variety to equal that upon these bushes of the Pearl. Should this productiveness prove constant the berry will be of great value for the market garden. With regard to the mildew, all we can say is what we saw, viz.,—an entire freedom from it. One bush stood next a

Whitesmith, and while the berries of that bush were covered with mildew and utterly worthless, no trace of this fungus could be found upon the Pearl.

More About Simon's Plum.

Editor Canadian Horticulturist.

Sir,—I see that my statement in your journal regarding the Simon Plum is being criticised considerably, and this in no way surprises me. The head of one of the leading lithographic firms of this country, told me in person not long since, and by letter formerly, that if they made colored plates of fruits true to nature in size and appearance the nurserymen would not buy them. They want them enlarged almost without exception. I can prove this by anyone whose business it is to make colored illustrations for the nurserymen. I wish to say, however, there are exceptions, and one that I just now know is the Wilder Pear as advertised by Charles A. Green, of Rochester, New York. In this case there is no exaggeration either in size or description, so far as I know. I think the same is true of the Idaho Pear being sold by a firm in Idaho. The Parker Earle strawberry as advertised by T. V. Munson, of Denison, is also true to nature.

Fig. 76.—The Pearl Gooseberry—(*Photo-graved for the* Canadian Horticulturist.)

In regard to the statements of some of your correspondents as to the very large size and quality of the

Simon Plum I wish to say that I am always open to conviction. My present opinion is based upon the specimens I have seen, and I emphatically state that I have never measured one with a greater diameter than one and one-fourth inches. If the gentleman, growing such large and delicious specimens of this fruit, will send me samples next year I will take great pleasure in giving this variety the full benefit of all the good opinion it rarely earns. This much and nothing more. The illustration I criticised shows the fruit to be from two to two and one-fourth inches in diameter, and, according to the statement of A. B. Dennis, of Iowa, in your October number, the fruit grows in that State to twice the size of the illustration, which would make them from four to four and one-half inches in diameter. Perhaps the gentleman is talking about pumpkins. I offer $100 each for specimens of Simon Plum measuring four inches in diameter.—H. E. Van Deman, *Pomologist, U. S. Dept. of Agriculture, Washington, D. C., Oct. 10th., 1889.*

Prunus Simoni.—Three years ago we set out a row of Simon's plums, using one-year-old plants. Intending to train them laterally on wires, they were set at an angle of over forty-five degrees, putting nearly all the stem under ground. As they started upright shoots from the stem, they were permitted to grow with a view to test the bush plan. At this time they are bushes, rather than trees, with several stems, and with branches to the ground. In this form they have stood the recent test winters almost perfectly, and are now quite well loaded with fruit which is now (July 5) much larger in size than any plum and wholly free from curculio or gouger marks.

As it has been said that the fruit has no value, I will state that in my opinion the authors of such statements have only tried it for dessert use, for which its flesh is too firm and its flavor not the best. When used for canning or stewing, it has the peach flavor without the peach bitter. When better known, I think it will be prized for culinary use on the northern border of the peach belt.—J. L. Budd.

The Peach of South Africa.

Sir,—I have relatives who live in "Transvaal," the Dutch republic of South Africa, who tell me they have peaches of a very excellent kind, which when full grown and ripe weigh from nine ounces to one pound each. They have sent a number of the peach stones from the above place to my son William, in Cape Town, to be forwarded to me, but as there is no express or parcel-post, my son has just sent me one in a letter and asks how he can send them, as there is nothing from Cape but letter or mail post at letter rate it would cost much, so I suggested, as he was well acquainted with most of the captains and chief officers of the S.S. lines, he might pack them and send them to my son in England and so get them through him as best we could. I shall hear in due time if he has done so. I enclose you the one he sent. Should you feel at all interested in the stone or not, please let me know. My wife's sister wrote a good deal about this kind of peaches, telling of their weight and their beautiful color and flavor. —W. S. Rawbone, 5 *Maitland Place, Toronto.*

This stone is being carefully planted, and should it prove in Ontario what it is in South Africa, our readers will soon know all about it. —Editor.

New Peaches—Centennial and Smith's Extra.

Sir,—Find herewith samples of Wealthy—extra size and medium, also sample of Centennial peach and also what I call Smith's Extra Late. It is about a week later than ordinary Late Crawford; in other respects similar. There is also one sample of Steven's Rareripe which we are picking now. It is Old Mixon in appearance, but ten days later A. M. Smith, *1st Oct.* 1889.

The *Centennial Peach* is certainly of striking appearance, being very large; this specimen measuring over nine inches in circumference, roundish in form, of yellow skin with crimson cheek, the flesh yellow of good quality, but, unfortunately a cling-stone. No doubt, however, that its

large size will make it popular in the market, coming in as it does about the first of October, when good peaches are scarce.

The *Steven's Rareripe* is a white fleshed peach, resembling in almost every respect the Old Mixon tree, but later, coming in about the first week in October; it is not quite freestone, but would come under that class. The quality is excellent, and the tree productive.

Smith's Extra Late seems to be all he claims for it. This sample measures about eight inches in circumference, is yellow flesh and skin, a perfect free stone. It is of the same season as the others, and in our judgment a valuable market peach and superior to Centennial, except in size.

THE SPARROW NUISANCE.

SIR,—I send you a clipping from the *Star*, on the sparrow. You will see by it that the "old farmer" deals as harshly with the sparrow's friends as with the wee birdies themselves. We agree with him, however, that they are a nuisance, far more destructive than useful. Our American cousins are wide-awake in the matter, and I am told by one of themselves that a bounty of two cents for every one shot is now paid or proposed to be, as also a "sparrow day" to be appointed, when every one able to handle a gun is expected to go sparrow shooting. We would do well to follow suit. From the same source I learned that in the crop of one sparrow, he shot, he found sixty-four grains of oats.—JOHN CROIL, *Aultsville*.

DOWN ON THE SPARROW.

SIR,—Two parties write in favor of the sparrow introduced by some spooney into this country some years ago to please a lot of children and old women. These destructive birds are held up as being useful in Canada by two writers, one Chas. Hughes and the other "Aliquis."

The latter speaks of a proverb that the strongest man has a weak place somewhere. To come to the point I would say that both these men are troubled in their top garret when they plead for the safety of the most destructive bird that ever was made. The extermination of the sparrow in England could never be accomplished, there being such facilities for breeding under the eaves of houses, also in the stacks of grain, which stand sometimes for several seasons before being sold, and the number of young ones in a nest is from ten to fifteen, with three and sometimes four nests in a year. Yet you find men who advocate the safe-keeping of these destructive pests, who know as much about the sparrow as the sparrow knows about them. I can inform these two if they want knowledge about the sparrow that they need not appeal to authors or books, but go and get information from the practical English farmer who can tell with certainty that they destroy millions of bushels of wheat while soft in the ear, for they won't eat anything that is hard. That being the case they then fly to the gardens, making destruction on the various fruits when nearly ripe, particularly white and red currants. They cut the bunches off with their bill and these, falling to the ground, are left to rot. Let these two enquire round the outskirts of our city and you will find the same complaint existing in Canada. Having been in Canada for thirty years I can say they have been the means of nearly exterminating all our pretty song birds. We also have in our woods the red squirrel. These little animals can't rest for them, for they pursue them in scores, driving them from tree to tree until they find refuge in some hole for safety. I hope and trust that the praiseworthy petition of Alderman Prefontaine will pass the board without a dissent.—RETIRED YORKSHIRE FARMER, AGE 73.

PLUM POCKETS—(TAPHRINA PRUNI.)

THIS disease is due to the presence of a parasitic fungus which attacks the young fruit, and by its growth within their tissues causes the peculiar development of the latter which finally results in the formation of the so-called "pocket."

The "pockets" (fig. 77) make their appearance soon after the flowers have fallen, attain their full size and drop from the tree towards the middle or last of June. At first they are more or less globular in shape, but as they grow older they become oblong or oval and frequently more or less curved. They vary in size, but as a rule are from 1 to 2 inches in length and from one-half to one inch in diameter. When young they are nearly smooth and can be distinguished from the healthy fruit by their pale yellow or reddish color. As they grow older the color changes to grey, the surface appearing as though it had been sprinkled with fine powder, and at the same time the "pockets" become wrinkled. Finally they turn black or dark brown, and rattle like bladders when brought in contact with any hard substance. Sections through the diseased fruit show that the walls are quite thick, and that in place of a stone there is a large cavity filled with fungous threads and air.

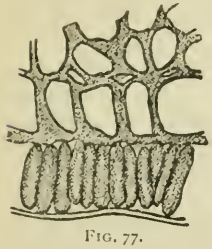

FIG. 77.

The fungus attacks the young branches and leaves, and when this occurs the injury is, of course, much greater than when the fruit alone is attacked.

The disease never sweeps over the country attacking all varieties of the plum alike, but, on the contrary, it often happens that a particular tree will bear nothing but "pockets," while adjacent trees of the same variety, grown under precisely the same conditions, show no traces of the disease whatever. As a rule, a tree that has once borne a crop of "pockets" seldom recovers, but continues with each succeeding year to produce a greater or less number of the malformations.

All plums are more or less subject to the attacks of this parasite, but it is usually more abundant on the red and purple varieties. It occurs also

"PLUM POCKETS." FIG. 78.

on the wild red and the beach plums, and on the dwarf, the wild black and the choke cherries.

A microscopic examination of one of the diseased plums will show that the fungus occurring within the tissues consists of three parts, namely, (1) mycelium; (2) asci; (3) spores or reproductive bodies. The mycelium consists of colorless septate filaments. These are particularly abundant

between the epidermis and cuticle, where by repeated branching and interlacing they form a net-work which is not more than one cell deep. The threads forming this net-work are composed of very short cells which soon start an independent growth at right angles to the surface of the pocket, forming small cylinders standing close side by side but apparently unconnected. They at first carry the cuticle upon their ends, but finally rupture it and appear on the surface. These bodies are the immature asci. Each "pocket" develops countless numbers of asci, and each ascus, as a rule, contains no less than eight spores.

The mycelium of the fungus is found in the smaller branches in early spring before the diseased fruit appears, which seems to indicate that it may live from year to year in the tree itself; moreover the annual recurrence of the "pockets" on the same tree furnishes additional proof of this fact.

The treatment suggested is to remove and destroy all the "pockets" before they reach maturity, and cut back the branches so as to destroy all the parts which are likely to contain the mycelium of the fungus.—B. T. Galloway, in Annual Report of the U.S. Department of Agriculture for 1888.

USE OF FRUITS.

Danger in Swallowing Cherry Pits and Grape Seeds.

It is reasonable enough to suppose that whatever, in the way of seeds, passes into the stomach unmasticated, and on which the juices of the stomach cannot act, must be unwholesome. A diet of cherry-stones, which some children indulge in, is pernicious in the extreme, and a youngster in my neighborhood, who filled his stomach with a pint of cherries, swallowed whole, nearly lost his life in getting rid of that particular meal. Two people in my neighborhood have died within five or six years, from eating grapes, the seeds of the grapes getting into the appendix, which is the term commonly given to a small intestine, which leads from the large intestine. It is but a few inches long, and comes to an end like a pocket, or *cul-de-sac*. What its use is in the digestive economy has not been made out, but when a grape seed, or bit of oyster shell, or any similar unyielding substance slips into it in its passage through the body, the result, I believe, is uniformly fatal, and death ensues in four or five days, after intense suffering—cramps, inflammation and swelling of the bowels. No remedy avails anything—the pain finally ceases and then the end is nigh. I have known of three young men of brilliant promise, who have been slain by the grape seed—a post-mortem in each case revealing the cause of death. One child, whom I know, who is very fond of grapes, and still does not intend to be a victim to the seeds, chews the grapes and thoroughly masticates the seeds, while many adults eschew the seeds altogether, which method seems to the ordinary grape-eater as a very sorry one, indeed. But there is a great deal in habit, and the child who masticates the grape seed, and has never eaten grapes in any other way, enjoys them fully as much as any one

I know. Of course, we are never out of the reach of danger from some quarter, and "in the midst of life we are in death." Still, it is but the part of good sense to avoid unnecessary harm, if we wish to keep well. To be continually in mortal terror of some impending calamity is very unphilosophic—one might better die and be done with it. The best we can do is to do the best we know, and leave the outcome "with Providence."—*Miss Fisher, in R. N. Y.*

The Rind of Fruit Indigestible.

That the rind or skin of all fruit is more or less indigestible, is a fact that should not be forgotten. We say all fruit, and the statement must be understood to include the pellicle of kernels and nuts of all kinds. The edible part of fruit is pecularily delicate, and liable to rapid decomposition if exposed to the at mosphere; it is, therefore, a wise provision of nature to place a strong and impervious coating over it, as a protection against accident, and to prevent insect enemies from the seed within. The skin of plums is wonderfully strong, compared with its thickness, and resists the action of water and many solvents in a remarkable manner. If not thoroughly masticated before taken into the stomach, this skin is rarely, if ever, dissolved by the gastric juice. In some cases pieces of it adhere to the coats of the stomach as wet paper clings to bodies, causing more or less disturbance or inconvenience. Raisins and dried currants are particularly troublesome in this way, and, if not chopped up before cooking, should be thoroughly chewed before swallowing. If a dried currant passes into the stomach whole, it is never digested at all. In the feeding of domestic animals this fact should be kept in mind. If grain and leguminous seeds are not crushed or ground, much of the food is often swallowed whole, and the husk or pellicle resists the solvents of the stomach, causing a considerable loss of nutriment. Birds, being destitute of teeth, are provided with a special apparatus for grinding their seed, namely, the gizzard. The indigestibility of certain nuts is partially due to the brown skins. Blanched almonds, on this account, are more digestible than those which have not been so treated.—*Popular Science News.*

Fruit a Perfect Food.

Some people are afraid to eat fruit, thinking that fruit and diarrhœa are always associated, when, if they understood the true cause of the diarrhœa they would know that it was caused by eating meat. In hot weather meat putrifies very quickly, and during this process alkaloids are formed which are very poisonous, acting as emetics and purgatives. 'Tis true that fruit eaten green, or between meals, will interfere with digestion and cause bowel troubles, but use fruit that is perfectly ripe at meal time and only beneficial results will follow. Acids prevent calcareous degenerations, keeping the bones elastic, as well as preventing the accumulation of earthy matters. This is because of the solvent power of the acids; but manufactured acids are not as harmless as those which nature has prepared for us in the various kinds of fruit. Fruit is a perfect food when fully ripe, but if it were in daily use from youth to age there would be less gout, gall stones and stone in the bladder. Stewed apples, pears and plums are favorite articles of diet. For breakfast or luncheon, in the dining room or in the nursery, there are few table dishes more wholesome or more delicious than well stewed fruit served up with cream or custard. There are many persons, however, who cannot eat it on account either of the acidity of the fruit or the excess of sugar necessary to make it

palatable. Sugar does not, of course, countera t acidity ; it only disguises it, and its use in large quantities is calculated to retard digestion. The house-wife may, therefore, be grateful for the reminder that a pinch, a very small pinch, of carbonate of soda, sprinkled over the fruit previously to cooking, will save sugar and will render the dish at once more palatable, and more wholesome.—*Exchange.*

Apple Butter.

To forty gallons of good sweet cider, made from sound, ripe apples, use three bushels of select apples. The cider should be boiled down to one-third or a little less before putting in the apples, which should be pared clean, all specks, bruises, seeds and seed cavities removed. They may be quartered, or cut into eighths, if very large. Stirring should commence as soon as fruit gets soft, and be kept up carefully until done. At all times prevent the flames of fire striking the kettle above the line of contents. When boiled down to ten gallons it will be done, and will be an article fit for a king. Put in earthen vessels, and when cold, dip clean white paper into good whisky or brandy, and lay it over the tops. In four months from making, if kept in a garret (the best place), the jars can be inverted on a floor or shelf without running out. Will keep for years, and if made with the right kind of apples, such as Rambo, Smokehouse or Bellflower, will become as smooth as cheese.—*S. Miller, in Vick's Magazine.*

Quince Marmalade.

Boil the Quinces until they are soft ; then peel and rub them through a sieve or on a grater. To each pint of pulp allow one pint of sugar, and boil for two hours, stirring frequently. It is well to place the preserving kettle where there is no danger of burning, but where the boiling is continuous. The long boiling causes the color to become a rich red.

Quince Jelly from Parings.

Put the parings and cores in a kettle and neatly cover with cold water ; boil until very tender, pour into a straining cloth tied over the top of a stone jar, let them drain untouched. To every pint of juice allow three-quarters of a pound of sugar, put juice in a kettle and let it boil, then stir in the sugar a handful at a time, boil twenty minutes and pour into glasses.

Cooking Fruits.

Fresh fruits should be cooked with boiling water. As sugar is rendered no more soluble, palatable, digestible, or nutritious by cooking and is, in the presence of some acids, changed to glucose by heat, and consequently is much less sweet, it should be added only long enough to dissolve nicely, before removing the fruit from the fire. Dried fruit should be washed and then soaked in cold water until no longer wrinkled in appearance, but until it has imbibed sufficient water to give the original rounded form, then cooked slowly in the water in which it was soaked. If cooked rapidly in boiling water without first being soaked, the cells are hardened by the heat and lose the power of imbibing water and the fruit comes to the table unsightly, unpalatable and indigestible.—*Clara S. Hays, before the Min. State Hort. Society.*

Fine Flavor in Fruit.

As the period for the ripening of large fruits is approaching, it may be well to remind inexperienced cultivators of the importance of high culture for the development of the finest quality. Some years ago two St. Ghislain pear trees bore fruit so unlike that they would not be re-

cognized as the same variety. There was almost no similarity in flavor. One tree bearing poor fruit stood in a thick grass sod; the other, with excellent pears, was kept well cultivated. Early pears as well as early peaches, on crowded trees, which ripen first on the tree, are much inferior in flavor to those which come later. The first are grown so thickly on the branches that they cannot sufficiently mature. Those which ripen later, after the early portion of the crop has been removed, have plenty of space to develop their fine quality. Hence the great advantage of early thinning. Take the Summer Doyenne pear, for instance. Those which are first ripe on densely crowded limbs are about half the size of those which ripen last, and strikingly inferior to them in quality. So with early peaches; the last scattered ones on the tree are commonly observed to be greatly superior in flavor to the first which ripen. These facts teach the importance of good cultivation, and of thinning the fruit on crowded trees, both of which operations will always repay the grower in large, beautiful and excellent fruit, instead of small, knotty and flavorless specimens.—*Albany Cultivator.*

✻ FLORICULTURAL ✻

Soot Water.

Soot water is highly recommended for plants. It is claimed that when made sufficiently strong and used in a clear state there is no other fertilizer, either solid or liquid, that is so well suited for amateurs' use as soot water, as it is gentle in its action and sustaining in its nature. This is not the case with the majority of concentrated manures, for if they are used slightly in excess, serious consequences are often the result.

When a regular supply of soot water is required there should be two barrels, says the writer who so strongly recommends it, or other receptacles, in which to make it. A cask holding about thirty gallons is suitable. In one of these place one peck of soot, and then fill up with water, and keep it stirred twice a day for a week. In ten days it should be ready for use, but it is necessary that it should be quite clear before using it or there will be a settlement of the solid matter on the soil. A better plan is to put the soot into a coarse hessian bag and place it in the water. Tie a strong piece of string to the mouth of the bag, and have one end of it fixed on to the edge of the barrel; the bag can be moved about in the water, for the purpose of mixing it with the greatest ease. As soon as one lot is ready another should be in course of preparation, so that with a little forethought a regular supply may be obtained.

Closing an article upon the subject a writer says: "As regards how and when to use soot water, as an old practitioner, I can only say that when given regularly when the plant is in active growth I don't know the plant that it would harm, but I have known it benefit a vast number. Even such delicate-rooted plants as Erica and Epacris I have kept in splendid health in the same pots for seven or eight years by the aid of soot water, and such plants as callas, camellias, azaleas and roses, may have regular supplies the whole year round. Such subjects as fuchsias, pelargoniums, cyclamens, primulas and ferns are gently benefited by it while they are in active growth. Plenty of soot water, whenever the soil about the roots is dry, will send green fly and other enemies to the roundabout; therefore I say, use it, and keep your plants healthy and your mind at rest. —*Western Rural.*

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

The Idaho Pear.

A box containing two specimens of the Idaho pear have just come to hand, from Mr. John Evans, Secretary of the Idaho Pear Co. These samples were unfortunately delayed in the customs until one was entirely gone, but the other was just in prime condition, showing the rich golden-yellow skin of our colored plate in January No., and in every respect fulfilling the characteristics there given. (See page 2). Its large size, its delicious buttery flesh, melting and juicy, and its high flavor, equalling the Bartlett in this respect without its muskiness, must win for it a high place among our leading varieties of pears for market. This sample measures eleven inches in circumference.

Farmers' Institutes.

The following is a list of gentlemen who have been recommended as speakers at Farmers' Institute, on subjects connected with fruit culture :—

A. McD. Allan, Goderich ; A. M. Smith, St. Catharines ; T. A. Race, Mitchell ; P. E. Bucke, Ottawa ; John Croil, Aultsville ; Thos. Beall, Lindsay ; G. C. Caston, Craighurst ; A. N. Pettit, Grimsby ; M. Pettit, Winona ; Rev. Geo. Bell,* Kingston ; W. E. Wellington,* Toronto ; J. K. McMichael,* Waterford ; J. A. Morton,* Wingham ; J. M. Denton,* London ; E. Morden, Niagara Falls.

The Buffum Pear.

The *American Garden*, for October, gives a very good photogravure of the original Buffum pear tree, still standing on the estate of Mr. Henry, Bedlow, Newport, R.I., and now about one hundred years of age. The tree is still very strong and healthy and bears most abundantly.

The tree was a chance seedling, and took its name from Mr. David Buffum, who was then a tenant of the farm, and a horticulturist. We have a good many trees of this kind at Maplehurst Fruit Farm, most of them over thirty years of age ; they are vigorous growers, and very upright, almost suitable to be planted for ornament. They are good and regular bearers, and the fruit grown upon the standards is usually better than that grown upon the dwarfs. When well grown, the fruit is of medium size,

*Those marked with an asterisk have not yet signified their willingness to act.

well shaped and well colored. It wholesales for about 50 cents a basket when the Bartlett is worth 75 cents and sometimes brings $1.00 in Montreal.

The Annual and Winter Meeting

Of the Ontario Fruit Growers' Association will be held in the Music Hall, Sandwich street, in the town of Windsor, on Tuesday, Wednesday, and Thursday, the 10th, 11th and 12th of December, 1889.

Distinguished specialists in fruit culture are expected to be present from all parts of the Dominion, from New York State and Michigan, to take part in the discussions. Papers will be read by prominent local fruit growers. The following gentlemen have also expressed their intention to be present if possible, viz.: The Hon. Chas. Drury, Minister of Agriculture; Mr Wm. Saunders, Director of the Experimental Farm, Ottawa; J. H. Panton, M.A., Professor of Botany and Horticulture, in the Ontario Agricultural College, Guelph; Mr. T. T. Lyon, President of the Michigan Horticultural Society; Mr. C. W. Garfield, ex-Secretary of the American Pomological Society; Mr. S. D. Willard, representative of the New York State Horticultural Society, and others.

Local organizations, such as the North and South Essex Farmers' Institute, the Essex Vine Growers' Association, the Windsor Board of Trade, etc., will cooperate in contributing to the interest of the meetings.

All meetings are open to the general public, both ladies and gentlemen, who are interested in the fruit orchard and the fruit garden, and all may take part in the discussions, either by giving their experience in the culture of the various fruits, or in asking questions through the Question Drawer.

The Question Drawer will be in charge of the Secretary, and any one may contribute to it questions in writing; it will be opened at various intervals and replies elicited by the President and from those most competent to answer.

Special excursion rates will probably be granted from all parts of Essex county by the railway companies, and certificates enabling the holder to return home for one-third fare to any point of the Dominion will be sent by the Secretary to any one applying for them. These must be had in advance and signed by the station agent at the starting point, or they will be of no use.

Samples of fruits grown in the various parts of Ontario will be shown, and anything worthy of notice will be reported upon for the Annual Report to the Government, by a committee appointed for that purpose. Fruit growers in the county of Essex are particularly requested to bring in samples of their best varieties of winter apples, winter pears and grapes.

The members' fee of $1.00 will be received by the Secretary at any time during the meetings. This will entitle one to receive the Canadian Horticulturist, a monthly journal for fruit growers, published by the Association; the Annual Report, containing the papers and discussions at the meetings, taken down *verbatim* by an able stenographer, and some tree or plant for testing. Copies of back numbers of these publications of the Society may be seen at the Secretary's table.

Programme.—(*Incomplete.*)

Tuesday Night.

8 o'clock.—Annual Meeting; President's address; election of officers; introductions and social conversation; appointment of committees.

Wednesday.

The morning will be taken up with meetings of directors and committees, and arrangement of fruit exhibit.

VARIETIES OF FRUITS, AND THEIR MERITS.

1.30 o'clock p.m.—"The Ontario Fruit List," presented by a committee. Discussion upon the same.

"Best selection of apples to plant in the county of Essex; three Fall, and six Winter varieties"; Allanson Elliott, President of the South Essex Farmers' Institute.

FRUIT EXHIBITS AT FAIRS.

Report of Committees on "Points for Judging Fruit." Discussion on the same.

Questions. (1) Should fruits exhibited be the *bona fide* growth of the exhibitor? (2) Is it best to have one judge or three? (3) How can fruits and flowers be labeled so as to be easily read by visitors? (5) In exhibiting single varieties of apples, would a peck be any better than a plate of each?

Evening Session.

8 o'clock p.m.—Welcome addresses by the Mayor of Windsor and others, Replies by the President of the Fruit Growers' Association and others.

UTILIZING SECOND GRADE FRUIT.

"Evaporation of Fruits," by Mr. L. B. Rice, Port Huron, Michigan. Questions and discussion.

"Apples for Stock," L. Woolverton, Grimsby, Ont. Questions and discussion.

What other profitable uses can be made of such stock?

Question Drawer opened.

The evening session will be enlivened by music and readings contributed by local talent.

Thursday.

THE PEAR.

10 a.m.—"My Experience in Pear Culture," by J. K. McMichael, Waterford, Ont.

"How to make the most of the Pear Orchards," N. J. Clinton, Secretary of North Essex Farmers' Institute.

Discussion.

Questions on pear culture. (1) What is pear blight, and what are the best means of checking it? (2) Are dwarf or standard trees the most profitable for the commercial orchard? (3.) What ten varieties are found most porfitable to grow in the county of Essex? (Three Summer, three Fall and four Winter.)

THE PEACH.

"Peach Growing for Profit," by Mr. James F. Taylor, Douglas, Michigan, Discussion on the subject.

Questions of peach culture. (1) What list or six kinds pay best in the county of Essex? (2) What are the best means of keeping out the borer? (3) What are the best size packages to use for choice peaches? (4) What is the best time and method of pruning the peach tree? (5) Can the yellows be cured? (6) Can it be carried from tree to tree by the saw and the pruning knife?

THE GRAPE.

2 o'clock p.m.—"How best to Prune a Commercial Vineyard in Ontario," by Mr. A. McNeil, Head Master of the High School, Windsor, also an extensive Vineyardist.

"Two modes of Pruning and tying up Grape Vines in France, with Practical Illustrations," by a French vineyardist, Mr. A. E. Tournier, Windsor.

Discussion on the subject.

Questions on grape culture. (1) What is the best mode of marketing the grape? Answer by Mr. M. Pettit, Winona, Ont. (2) What is the simplest way to make a small quantity of pure grape wine for home use? Answer by Mr. Ernest Girardot, Windsor. (3) What nine varieties of grapes succeed best in the county of Essex (Three black, three red and three white?)

TREE PLANTING.

"Fall Purchasing and Fall Planting of Trees," by T. H. Race, Mitchell, Ont.

Discussion.

THE PLUM.

What are the six most profitable varieties of plums for Southern Ontario, two of a color? Answer by Mr. S. D. Willard, Geneva, N. Y.

FRUIT SHIPPING.

Would it be wise to interview the railway companies regarding a special fruit train service, on the ground that the express companies are no longer competent to carry the ever increasing shipments of fruit in a proper manner.

8 p.m.—What kind of hedges are best suited for hedge in Southern Ontario? Answer by Mr. A. McNeil, Windsor, Ont.

"Fruit Rooms and Storage of Fruit," by T. T. Lyon, of Grand Haven, Michigan. Questions and discussion.

Question Drawer opened.

Closing addresses.

Music and readings by local talent will also be furnished to enliven this session.

QUESTION DRAWER

Treatment of Rhododendrons.

81. WHAT is the proper treatment and soil for Rhododendrons?—E. W. TAYLOR.

Reply by N. Robertson, Superintendent Government Grounds, Ottawa.

The main point is giving the root a light porous soil. Leaf mould in its lightest form is the best. The top does not seem to suffer from the heat of the sun, but the root does, and must be kept as cool as possible or no success can be met with. Some growers advise sawdust, that of the oak in preference to all others; this I have never tried, but the evidence given proves that, with this, more success was attained than with any other substance used, even pine sawdust. They are not hardy out of doors, even with protection in our climate, but the dwarf species, known as greenhouse varieties, are very beautiful, but require considerable space where they are grown, which is often an objection to growing them; a rather cool temperature suits them best.

Remedy for Rose Thrip.

82. CAN you inform me in journal or otherwise the name and cure for a small whitish fly that flies in and out among roses and other plants, eating the under surface of leaves, specimen included? The best cure I have found consists in holding a piece of sticky fly-paper under or near branches and giving them a slight tap when many of the flies are caught. They do not care for Paris green or tobacco.—E. W. TAYLOR.

This insect is properly known as a Leaf Hopper, and belongs to the family Hemiptera, genus Cicadellina, and is of late years very troublesome, indeed, both to rose leaves and grape-vine leaves. The remedy proposed by our correspondent would be very slow. We have used pyrethrum powder with complete success, puffing up the dry powder against the under side of the leaves when they are a little damp with dew. Perhaps a more economical plan would be to spray the leaves with a solution in proportion of two ounces of pyrethrum powder to a gallon of water.

Pear Trees for Sandy Soil.

83. I WAS thinking of getting some pear trees. Would you think it advisable to plant in sandy soil, and what kind is best. An answer will oblige.—JOHN CLEMENS, *Brantford.*

The pear is more liable to blight on sandy soil, and so far as we have observed has less color, but most kinds thrive very well in other respects. We have grown the following kinds on a sandy loam with good success, viz.: — Tyson, Bartlett, Howell, Beurre Brown, Bartlett, Belle Lucrative, Howell, Sheldon, Louise (dwf.), Duchess (dwf.), Beurre d'Aujou and Lawrence.

What is it?

84. I SEND you a natural curiosity by sample post, that grew on one of my crab-apple trees. Is it a pear, an apple, or a pair of apples.?—W H. WYLIE, *Carlton Place, Ont. 11th October* 1889.

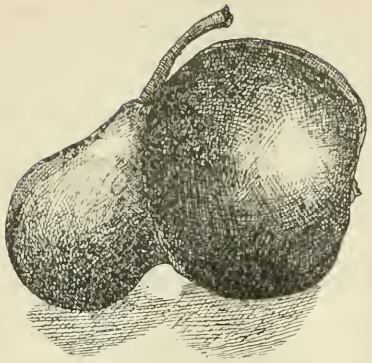

Fig. 79.

This is evidently but an abnormally shaped apple, as Mr. Wylie tells us there is no pear tree growing near it. It may interest our readers to see it, and therefore we have prepared the accompanying sketch of this curiosity.

Mixing Manure and Ashes.

85. I have a quantity of hen manure which I intend to apply to my garden and orchard; also some wood ashes. Do you advise applying them separate or mixed together.—J. C., *Aultsville.*

Reply by Prof. Panton, O.A.C., Guelph.

Do not mix hen manure and ashes, because a chemical change takes place and *ammonia* is freed.

The *lime* and *potash* of the ashes seizes the acid holding the *am.* in the hen manure, and the *am.* is thus let go into the air.

OPEN LETTERS.

he Catalpa Speciosa.

Dear Sir,—As my apparent success spoken of in the *Horticulturist* and the Report of the Fruit Growers Association has, I believe, induced many to plant the Catalpa Speciosa, I think it but right to inform you that unhappily I have found that, while every one of mine has successfully stood our northern winters, the tree has such a drawback that nothing would induce me to plant another. I have, in addition to smaller ones, two with trunks measuring six inches in diameter, both of which have had the whole top half snapped off, completely destroying the trees, caused by heavy winds after rain, the immense leaves being saturated, making the trees top heavy. Every Catalpa I have has had more or less branches broken off in this way, and their shape spoilt, though they are mostly planted within high board fences, and protected with surrounding buildings.

I am sure that many of your readers will be sorry to hear so poor an account of what promised to be one of the most desirable shade trees we have in this country.—L. H. Kirkey. *Collingwood, September* 17, 1889.

Northern Light Grape.

Sir,—Another year's experience with this beautiful grape fully confirms the fact it will ripen with Moore's Early when planted side by side on the same soil with the same exposure. The owners are very sorry that for several reasons the propagation of plants has not been so rapid as they could have wished. Owing to the heavy crops produced on the parent vine the wood of 1888 did not ripen sufficiently to ensure its growth so that the proprietors have only about three hundred plants on hand. It is intended to wait for another year or two before placing it on the market for sale. Amongst the few grapes that set well on the bunches this year at Ottawa was the Northern Light, Niagara and Moore's Early. As a rule other varieties gave imperfect bunches, though this did not occur in every locality.—P. E. Bucke, *Ottawa.*

Mitchell's No. 1. Tomato.

Sir,—Will you kindly allow me to report on Mr. Mitchell s No. 1 Tomato through the medium of your valuable journal. I am not only well pleased with the latter but am proud of it, proud to see that Canadians can support such a paper. No. 1 with me were as good as any I have ever tasted in quality, uniform in size and as large as samples at Barrie show. But in my experience the chief point of excellence is their being two weeks earlier than any others planted. This is also Mr. J. W. Lee's verdict, also that of a neighbor.—S. Spillett, *Nantyc, October* 7, 1889.

The Ontario Apple in Nova Scotia.

Sir,—My Ontario tree has succeeded admirably here. The tree is hardy, a vigorous grower and an early bearer. In quality the fruit is only middling, but is *enormously* productive of large, sound, long-keeping apples,

which keep until July. I have no other late variety half as useful.—CHARLES E. BROWN, *Yarmouth, N.S*

Golden Queen.

SIR,—This raspberry, which I received from the Association last year has done finely, and gave me a quart of as fine berries as ever I tasted, and that is the testimony of several others that tasted them It wintered well, showing no signs of winter killing, although it is in an exposed place. It has made a vigorous growth, sending up many shoots which I intend to set in the Spring. This is the result from one bush, the others I received did not live. I think the Golden Queen has come to stay, and for a near market I think it will take the lead in a few years, as soon as its good qualities are known.—W. C., *South Livermore, Maine.*

OUR FRUIT MARKETS.

THE scarcity of *apples* is being more and more realized in Ontario, and, though prices have not yet advanced above quotations of last month, yet apple shippers feel confident of very high prices before the spring. Farmers in the Niagara peninsula even, who live on the mountain, and away from the favoring influence of the lakes, have no apples at all in their orchards, and drive twenty and thirty miles to secure a supply for their families.

Mr. J. F. Wilson writes that buyers are paying $2.00 per barrel at Chatham, for the bare fruit, and paying for barrels and packing extra; and no doubt they can well afford this price. Kings and other fancy stock are in especially good demand, and are worth from $3.50 to $4.00 per bbl. in our home markets.

Pears are no longer in great demand, dealers having for the most part laid in a good stock of Duchess, and few are being asked for by consumers.

Grapes are ruling higher than for many years, the lowest price received by growers being 4 cts. per pound for Concords in ten-pound baskets. They are now advancing again, and are worth about five cents for choice samples.

A few apples are going forward to the British markets, but not one quarter of the quantity that went over last year. The average net returns, so far, to Montreal men, amount to about $3.00 per barrel for winters, an encouraging result; but when we have a prospect of getting $3.00 per barrel right at home, we doubt the wisdom of risking the chances of any foreign market.

We subjoin a few market reports, which have come to hand:—

Bournemouth, England.

SIR,—Hearing your journal mentioned as the leading pomological organ of Canada, we beg to imform your readers of the scarcicy of good English Apples this autumn, and would remind that by shipping good sound fruit to England this year they are bound to carry all before them.

We would also add a word of caution, viz.: to avoid crushing the London and Liverpool markets by fowarding all goods to these centres, whilst the smaller, but none the less wealthy, towns are starving for good fruit.

The great markets are quite overwhelmed, although their demand is enormous, and it is certain that no one can make a mistake in scattering their consignments, (so equalising prices) whilst those who presist in sending to one market, often sutter heavy losses

We ourselves are prepared to receive consignments and guarantee top prices our trade being of the highest class, and no local fruit worth naming.—A. MAY & Co., 12 *The Arcade, Bournemouth, England* 18*th October*, 1889.

Liverpool.

SIR,—Arrivals of Apples during the past week have been on a rather more liberal scale, although strictly moderate

The greater part of the stock now arising from all ports, is in poor condition, which class of goods can only be realized at a discount, but fine, sound bright stock is in very great demand. We quote with a steady market :

Canadian Kings, 20s. to 25s. ; Ribston, Pips, 21s. to 26s. ; Various, 14s. to 19s. 6d : States Kings, 17s. 9d.to 25s. 6d ; Baldwins, 12s. to 18d. ; Greenings, 11s. 3d. to 17s. ; Various 14s. 9d. to 20s. ; large stock especially of red descriptions, finds eager buyers, of which quality we can strongly recommend shipping—Williams, Thomas & Co, 10th *October* 1889.

Glasgow.

Messrs. James Lindsay & Son, Glasgow, cable their market as follows : Greenings, 14s. to 16s. or $3.40 to $3.89 ; Baldwins, 17s. to 20s. or $4.13 to $4.85 ; Kings, 20s. to 24s. or $4.85 to $5.83 ; BenDavis, 19s. to 20s. or $4.62 to $4.85 ; with a very active demand for good fruit.

The shipments to October 5th, 1889, aggregate about 43,000 barrels, against a total to same date last year of about 175,000 barrels. a difference in favor of last season of about 132,000 barrels. This week the shipments will probably be heavier than heretofore, the market abroad having improved and the late varieties of apples being in condition to ship.—Otto G. Mayer & Co., *per Josiah Rich, New York, October 9th*, 1889.

London.

Messrs. W. N. White & Co., Fruit Brokers, Covent Garden Market, London England, send the following Apple Report : *The Wanda, S.S.*, from Halifax, Nova Scotia, arrived on Tuesday last, with 1,804 barrels, the bulk of which have been sold here at public auction this day. The fruit being in fine condition has realized high prices ; Gravensteins, from 17s. to 28s. per bbl. Ribstones, a few barrels of very choice made the high price of 32s. to 40s. bbl ; Emperors. 21s. bbl ; Maiden Blush, 15s. bbl ; Northern Spies. 16s. to 24s. bbl,.

These prices should convince all shippers that London can always pay a high price for choice fruit ; and that Covent Garden is the best market in London, fruit being sold their by public auction and not by private treaty —W. T. Costigan & Co.

Montreal.

Sir,—The month has been a busy one in the fruit trade here. Apples—the receipts are unexpectedly large, but prices have been well maintained, as a great part of the stock has been bought for English account. Montreal has been exporting more apples than all the American ports put together this season. Good winter apples have sold mainly from $2.75 to $3 per bbl., and seconds $2 to $2.25 per bbl. About 15,000 bbls. Maine apples sold for Liverpool at $3 per bbl. here.

The receipts here during this month aggregate about 100,000 bbls. Other domestic fruits are about done for the season. Grapes—A few late lots of Concords have sold at 6c., per lb.; Delawares 8c. to 10c. Quinces very scarce, $6 to $7 per bbl. Pears—Beurre Anjou, $7 to $9 per bbl.; Sheldon's Duchess, etc., $5 to $7. Spanish Grapes are largely imported and now take the place of home grown.—Vipond, McBride & Co.

Apples.—The receipts of winter fruit have been considerable, although not as large as expected. Large quantities are being put aboard steamers for British ports, large engagements having been made at 3s. Liverpool, London and Glasgow. The receipts of winter fruit from St. Catharines which were shipped as No. 1, only grade No. 2, causing great dissatisfaction, some lots received from the Niagara district having turned out the veriest trash. Owing to these poor receipts the market is dull and will remain so until they are worked off. Sales have been made of car lots of No. 1 winter fruit at $2.50 to $3, and No. 2 at $1.75 to $2. A lot of 1,200 fancy winter stock was sold at $3.25. Cables from Liverpool quote a lot of American Ben Davis at 16s. average, and a small lot of fancy Kings at 27s. Some very high prices are reported from London, ranging from 16s. to 24s., for Nothern Spies, and other choice descriptions from 32s. to 40s. per bbl ; but it is thought that the shipment now going forward will soon reduce those aristocrate values. A cable from London says apples are booming.

Grapes.—Blue grapes at 5c. to 6, and red 5½c.

Pears.—The few varieties offering range from $3.50 to $6 per bbl.

Onions.—Sales of 5,000 are reported at 65c. to 70c per crate. Canadian $2.50 to $2.75.

Potatoes,—The market is easy with sales of car lots reported at 60c. to 70c. per 90 lbs. as to quality.—Trade Bulletin, *18th October* 1889.

ROSE-JOHN HOPPER.

THE

Canadian Horticulturist

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ROSE JOHN HOPPER.

AMONG the numerous flowers that may be used to adorn the garden there is none to compare with the rose; or to express it in the language of the humorous Thomas Hood,—

The tulip is a courtly queen
Whom, therefore, I will shun;
The cowslip is a country wench,
The violet is a nun.

. . . . .

The lily is all in white, like a saint,
And so is no mate for me;
And the daisy's cheek is tipped with a blush,
She is of such low degree.

. . . . .

But I will plight with the dainty rose,
For fairest of all is she.

The rose is a study by itself, and has received so much attention from gardeners that there are now nearly one thousand named and catalogued varieties, which are in general cultivation. Among the hybrid remontant roses, the subject of this sketch is one which deserves extended cultivation. It was originated in the year 1862, by Mr. Ward of Ipswich, England, from Jules Margottin crossed with Madame Vidot, and has proved itself a hardy, vigorous and free blooming variety.

In Mr. H. B. Ellwanger's work on "The Rose," the John Hopper is thus described:—"Bright rose with carmine centre, large and full, semi-globular, light red thorns, stout bushy growth." This point of light thorns is a point in its favor for cutting, and the only point urged against it by exhibitors is that the flowers will not stand a long journey.

Mr. Girdlestone, an English gardener, speaks of this rose as follows:—

"The opening of the flowers is rarely affected by weather of any sort, except that in a very hot, dry season the blooms expand somewhat too rapidly; but, on the other hand, autumn blooms are often developed in the cooler weather late in the year in very great beauty of color. Another good point about this rose, which, no doubt, has also materially contributed to its long-continued popularity and wide distribution, is the readiness with which cuttings of

it take root. It roots almost more easily than any other Hybrid Perpetual, and grows far better on its own roots than when budded on Manetti, a stock on which (like most of the smooth-wooded roses) it will not long succeed unless it is planted deep enough to be able to send out roots of its own from the collar.

Since writing the above we have received the following lines from Mr. Fred. Mitchell, on the "John Hopper" rose:—

"'John Hopper,' the rose selected for distribution the coming spring, is not a new variety, but is a variety of such general all round merit that it is worthy of better acquaintance, and more general cultivation. In Britain and throughout Europe, wherever roses are grown, it has long been known as a reliable standard sort; it was raised twenty-seven years ago by Ward, of Ipswich, England, from seed from 'Jules Margettin' another good standard variety. It is of good form, and of a bright deep rose color, generally deepest in the centre. The foliage is large and healthy-looking, and the growth strong and stubby. It is a very easily managed rose, and in short has but one fault, and that is its very objectionable incongruous name so utterly unsuited to a daintily beautiful rose."

SEASONABLE HINTS FOR FRUIT GROWERS.

PROFITS OF FRUIT CULTURE.

BEGINNERS in fruit culture need to be warned against being carried away by such statements as the following, which may be true in certain exceptional cases, and false in the majority.

(1.) It is possible to raise $500 to $600 worth of cherries from a single acre in one season.

(2.) Strawberries are very profitable, paying at the rate of $700 per acre, using Crescent and James Vick two to one. Raspberries come next after strawberries. By planting such varieties as Tyler, Hopkins and Ohio, cutting back heavily and giving good cultivation, at least two thousand quarts per acre can be obtained, which sell for 15c. a quart. The cost of cultivating will not exceed $50 per acre, and the picking and marketing $50 more; two thousand quarts is only an average crop, and this would give a profit of $200 per acre.

(3.) Strawberries should yield 4,000 quarts per acre, raspberries 3,000, blackberries a little more than raspberries, and currants should yield 1,500 to 2,000 quarts per acre.

(4.) An acre of strawberries will sometimes pay better than five acres of grain.

These may be possibilities, but not probabilities, except where all conditions are most favorable. To those of us who are in the business, it is no doubt an incentive to greater zeal and industry to read of the possibilities that lie before us; but we should give both sides of the picture, and sometimes show the losses that are just as frequent as such fine profits. Twenty years ago the writer was led away by golden dreams, the outcome of such reading. Easily reckoning that if one acre in fruit culture should yield $500, ten acres would give ten times as much, and so on, he planted his whole farm to fruit, expecting, of course, some such proportion of profit; and that if the hundred acres did not yield $50,000

per annum, it would at least give a most enormous income. Grain farming was therefore thrown overboard entirely, for how could one afford to devote to grain, land in which such grand possibilities lay. The cows were sold, for how could land be given up to pasture, which might yield $500 per acre? Our fellow fruit growers of experience will smile at the recital, and imagine the result. Difficulties of every kind arose. Expenses without number proved that the annual outlay required to run a hundred acre farm would bear no comparison to that required to run a fruit farm of the same extent, and that one acre of strawberries alone costs as much to cultivate properly as a ten acre field of wheat, and more. Instead of $600 off a single acre of cherries, he found after waiting many years, that rot often took the whole crop, that some kinds sold poorly, that some varieties bore scantily at the best, and that although he might now plant such varieties as would come up to the mark, ten chances to one that no beginner will realize any such returns.

The fact is that no man can expect to be successful in fruit culture or in any other line, without experience and a thorough knowledge of his business. It is not acre for acre that should be compared, but rather cost of production; and, when plants, labor, manure, picking, baskets, etc., are counted, the proceeds are often very small.

THE VENTILATED APPLE BARREL.

The profits of apple growing are very much reduced by the cost of the barrels. Thirty cents a barrel is about the least sum for which the ordinary barrel can be manufactured, and some less expensive package is needed, especially when we consider

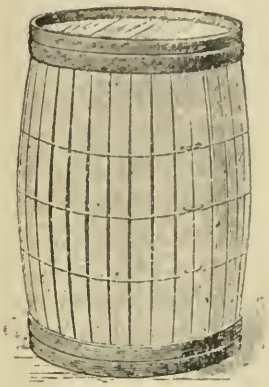


FIG. 80.—THE VENTILATED BARREL.

that there is no return of empties. We have low-priced baskets for our small fruits, grapes and peaches, and we want a low-priced one for our apples and pears. There has been one recently invented in Iowa, a sample of which has been shown us, and which we hope will be the very thing we want, for it can be manufactured at half the expense of the ordinary barrel, and possesses some advantages over it. It is made of elm wood, peeled from the log by a veneering machine, and cut into narrow staves. These are woven together with fine copper wire, as shown in the engraving, in such a manner that no hoops are required, except the two at each end to hold the heads in place, and one wide, strong one around the middle, in the inside, which gives firmness to the bilge and keeps all pressure off the fruit, caused by rolling or piling the barrels.

The company at Muscatine, Iowa, which has patented this barrel and are manufacturing it, claim that it has the following advantages over the ordinary barrel:

It weighs from five to seven pounds less than the ordinary barrel, making a material saving in freight charges.

It is the only thoroughly ventilated barrel made, a very important point.

It is stronger and more durable than any other barrel.

It costs less than one-half for trimming, and does not require an experienced hand to cooper it.

Never varies in size, even to the extent of a quart.

The heads are warranted not to come out in transit, and no liners are required, altogether making it the cheapest and best barrel in the market.

From an examination of the barrel, we have no doubt that these statements are correct, and we shall be glad to see it introduced into Canada, if only on the score of economy. It can be made in any size, and for shipping fancy apples and pears it seems to be admirably adapted, showing so well the color all down the sides.

Whether ventilated packages are best in all cases may perhaps be questioned, but, for the majority of cases, where a close barrel hastens the ripening process too much, ventilation is just what is wanted. In crossing the ocean, too, it may prove the right package, because it would permit the fruit to receive all the benefits of the atmospheric blast of cool air which is made to pass through the compartments in which the apples are stored, on some of the steamship lines.

BRACING OF POSTS POR FENCES AND FOR GRAPE VINE TRELLISES.

One of the chief objections to the wire fence is the difficulty in keeping the wire from sagging. The heaving and thawing of the posts with the winter frosts soon causes the whole fence to look untidy. A most thorough mode of bracing is shown in the engraving, which explains itself, but it is rather clumsy looking, and perhaps no more lasting than a plan which we have adopted of late at Grimsby, in our vineyards. No wooden braces are used at all, but the last two posts at the end are made firm by wire stays, which pass diagonally from the top of each post to the ground, at an angle of about 45°, where each is fastened about a flat stone, buried nearly a foot below the surface. This is found to hold with great firmness, is out of the way, and looks quite tidy.

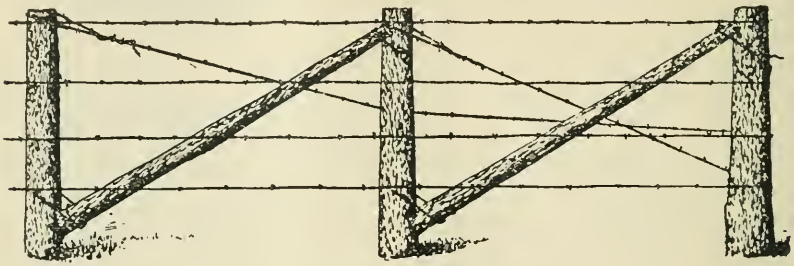


FIG. 81.—BRACING POSTS.

THE GRAPE CROP.

In this County of Durham grapes have been a failure this year. They, up to the blossoming time, gave great promise, but a heavy frost then did great damage.

In my own garden, which is sheltered by a belt of evergreen trees, the Delaware, Early Victor and Lady were well loaded with fruit, but the two former did not fully ripen, and the latter only fairly so, although all were bagged and allowed to remain on the vines until the 18th October.

On a Lady vine planted three years ago, I had sixty bunches of grapes, weighing from one-half to one pound. Last year this vine had ten, and the fruit resembled that of the Niagara in color and bunch, but not quite so good a flavor. It ripens earlier than either the Delaware or Early Victor. The vine is a strong grower, with a large thick leaf and compact bunch. It is very free from the thrip or mildew, which this season has been very troublesome here on both the Clinton and Delaware. I am so pleased with the Lady that I wish to recommend it for trial wherever the Delaware will ripen.

Three years ago I ordered six new varieties of vines from a nursery near Toronto, only two of which when fruited turned out true to name, and three of them a red variety which drops its berries before they are ripe. It is simply dishonest to substitute such without permission, for special sorts ordered for trial. I hear complaints from my neighbors of substitution also in their orders and threats of publishing the name of nurserymen doing so if again repeated.—J. Smart.

CONCERNING SOME APPLES WORTH KNOWING ABOUT.

A Paper by the Late Robert Burnet.

THE WINTER ST. LAWRENCE.

THIS is a good variety, and enjoys the reputation of several advantageous characteristics. The tree is perfectly hardy, even in severe winters, and in tolerably high latitudes. Indeed, for northern Ontario we scarcely know a more eligible apple for orchard cultivation. It bears well, is admirably adapted for transportation, will carry long distances without detriment. We would like to see this variety extensively tried, and, after suitable trial, largely cultivated. The worthy Editor of the Horticulturist might profitably give insertion to a paragraph that it is worthy of a thorough trial in all locations in Ontario.

THE CANADA BALDWIN.

We have made careful trial of the qualities of this superb apple. A number of years ago I gave an order for a number of barrels from a Montreal house, to be shipped to the Lower Provinces. They turned out

of first quality. As a dessert fruit they are first rate, and have the peculiarity of having red streaks running through the white flesh. The tree is prolific, and can be got from R. W. Shepherd, The Nurseries, Como, Quebec. Perhaps nearer at hand from our Western Nurseries, but this is beyond my knowledge. It carries well, and without injury can be transported long distances. It is a good keeper; I kept some samples well into May. Then they were neither flabby nor wrinkled. When better known it will become a favorite market apple, as its color is altogether in its favor—showy and attractive. I have been calling the attention of some fruit growers in the neighborhood of Hamilton and Burlington to its excellence, but as yet have no report to give of its successful cultivation. I procured for an enthusiastic fruit grower, in the neighborhood of Lake Simcoe, some trees of this variety last summer, and they have done well in that locality. The soil, on which they were carefully planted, was a fine clayey loam. We heartily commend this variety to western cultivators, and though I have no permission to say so, yet from his known urbanity, we are satisfied that any one desirous of further information about this valuable apple, by applying to Charles Gibb, Esq., Abbotsford, Quebec, would receive a courteous reply, and much available experimental knowledge of the value of this variety. It is just a pity it bears a well known, but not half so valuable a surname; and one of the rules of the American Pomological Society on nomenclature, might, with great propriety, be applied to the confusing name of the Canada Baldwin, and give it a distinctive alias to distinguish it from its popular confrere in the west.

FAMEUSE SUCREE.

A number of years ago I had the privilege, in company with Mr. Gibb, of Abbotsford, to visit the orchards of the Hon. Mon. Prudhomme, situated in one of the Coteaux of Montreal City. The main object was to inspect the "Fameuse Sucrée," which originated on the hon. gentleman's grounds. On trial we found this apple in point of quality A1. I give it as my individual belief that it is an apple superior to the Fameuse or Snow Apple. I am aware that this is a risky assertion, and some apple growers will be apt to shrug the shoulder, still we would like them to give a trial to the apple before coming to a too hasty conclusion. It is hardy, and well stands the winter at Montreal. We might expect that it would do well in our latitude at Hamilton. The beauty of the apple gives it a great advantage as a dessert fruit. Its color is of the deepest purple, and well sets off other fruit in the dessert dish. We found it so productive that the weight of fruit had prostrated more trees than one, and yet they bore, wrecked as they were, lying on the ground.

THE DECARIE.

On a neighboring estate to that of the Hon. Mon. Prudhomme, we found the Decarie, the property of a courteous gentleman of the same

name as the apple, and the originator and owner of it. It is a magnificent apple, the Decarie. In color perfect, with a bloom like that on Pond's Seedling plum. Quality all that could be desired, and a prolific bearer. This fall fruit would be a great acquisition in Ontario, we are deeply persuaded. We secured some scions two summers ago, but owing to their having dried by the way, only a few succeeded. We strongly commend this variety for orchard cultivation, assured that there is money in it.

PEACH OF MONTREAL.

Hardy apple of good quality, fine dessert fruit, saleable, though a yellow color. A heavy bearer, but easily bruised; valuable for a near market—a very profitable apple.

Milton, 1889.

KEEPING FRUIT.

EXPERIMENT IN KEEPING WINTER APPLES.

A question of interest to apple-growers was thoroughly experimented upon at the Ohio Experiment Station during the last season. The object of the experiment was to determine whether early or late picking of apples is best for their keeping, and which of the leading market varieties is really the best keeper. The experiment was supervised by W. J. Green, and was begun September 26th, when all the kinds were deemed of proper ripeness for early picking; the second picking was on October 6th; 3rd, October 13th; and last, October 20th.

At each picking, 100 perfect apples of the following varieties were gathered for the test: Ben Davis, Newton Pippin, Jonathan, Roxbury Russet, and Baldwin; and the Ben Davis showed the best keeping qualities all through the experiment; the tests also showed that with all of these kinds, early picking is better for keeping than late picking, though for the first two months the difference was very trifling. Thereafter it became more perceptible; and 256 days after picking, the number of specimens of each left, was:

Ben Davis, 1st picking	43;	2nd, 33;	3rd, 12;	4th, 12
Newton Pippin, 1st "	13;	2nd, 8;	3rd, 6;	4th, 1
Jonathan, 1st "	11;	2nd, 8;	3rd, 2;	4th, 0
Roxbury Russet, 1st "	5;	2nd, 1;	3rd, 1;	4th, 1
Baldwin, 1st "	3;	2nd, 0;	3rd, 0;	4th, 0

We are glad to place the results of this timely, judicious and instructive experiment before our readers, because we believe they may be of both present and future benefit to apple-growers.

KEEPING GRAPES.

There is an article going the rounds of the press which advises burying grapes, enclosed in a stone-pot, in a dry knoll until New Year's day, and then digging them up for use. There is no doubt that the cool even temperature of the ground, and the moisture of the same, afford just the right conditions for preserving fruit, but why may not the same conditions be secured in a properly constructed fruit cellar, or even in an ordinary cellar, by admitting plenty of cool air, and keeping the temperature down to nearly the freezing point. We cannot see the fun in digging up grapes, or any other hid treasures in mid-winter, when they can be just as well preserved in some more accessible place.

Mr. Charles A. Green, in reply to the question, "How shall we keep grapes?" very sensibly says:

"How shall we keep grapes?" Why, keep them cool, dry and in thin layers. If you heap them in baskets they weigh down those in the bottom so closely as to cause mould. Place a layer of paper in the basket when half filled, then place on more grapes. We keep ours in a cold room. When in danger of freezing we stack the baskets four or five deep in a pile and cover with heavy blankets. If desired to be kept very long we sometimes pack in dry sawdust. We have tried bran, but it did not serve a good purpose. There is no trouble in keeping ripe grapes, even the Concord, though thick skinned varieties such as Agawam, Salem, Wilder, etc., keep better.

RASPBERRIES—VARIETIES TESTED.

In the Report of the Ohio Agricultural Experiment Station, we find some results of experience that may interest our readers, and here present them:

Ada.—This is the second season that Ada has fruited here, and it has thus far been satisfactory, with the exception of showing a tendency to blight. As the blight is not troublesome in most other sections, and so far as known does not appear at all in those localities where the raspberry is most at home, there need be no fear on that score, In vigor and productiveness the Ada equals the Gregg, and perhaps excels it in the latter particular, and is about the same in season, continuing in bearing a little longer, if there is any difference. In fruit, the two varieties are similar, the Ada being a trifle the smaller. We have not been able to test its hardiness, but there can hardly be a doubt but it will prove satisfactory in that respect. Commercial growers will do well to give it a trial.

Hilborn.—This variety has thus far given entire satisfaction here, the plants being hardy, vigorous and productive, while the fruit is unsurpassed in appearance. It can hardly fail to take rank as one of the best second-early black caps. Another season's trial confirms what has been said of this variety in previous reports. Its uncommon vigor, productiveness and beauty of fruit commend it to the attention of fruit-growers generally.

Johnston's Sweet.—This is another good second-early black cap, and is thought by some to excel all others in quality. It has shown no weakness here, except that the canes have been affected more than most other varieties by blight. It produced but little fruit the past season, owing to the blight. As stated concerning the Ada, this need cause no uneasiness to those living in more favored sections. It is a safe variety to try.

Marlboro.—There is still much difference of opinion as to the value of this variety. It does not rank as a prolific bearer here, and yet is valuable, as it uniformly gives a fair crop of very fine berries. It surely has sufficient merit to warrant further trial.

Nemaha.—Thus far this variety has not proven equal to the Gregg in productiveness and size of fruit. Not fully tested as to hardiness. Another season's trial shows that it is decidedly inferior to the Gregg in the above respects, the berries being about the size of the Ohio.

Earhart.—Fruited here for the first time last season. The plants are vigorous and healthy, and apparently productive. It is probably one of the best of the ever-bearing sorts. The first crop this season was nearly equal to that of most other varieties, and there are still considerable numbers of unripe berries and blossoms.

Golden Queen.—So far this variety has proven to be all that has been claimed for it. The plants are hardy, vigorous, healthy and productive, while the fruit is beautiful in appearance and excellent in quality. It is an excellent variety for home use, and might be profitably grown for some markets.

Tyler (Souhegan).—The most reliable and profitable of early black caps, The fruit is small, and not of high quality, but sells at good prices because of its earliness. It has been reported as having a tendency to rust in some localities, but it has not exhibited that weakness here, and it is a matter of doubt if those so reporting it have it true to name.

Turner.—Among the red varieties the Turner, is still the standard for earliness and productiveness. It may not show the first ripe berries, but it will yield a good picking

at an earlier date than any red sort thus far tested, with the possible exception of Highland Hardy. If the bushes are closely pruned in the spring, the fruit is sufficiently firm for near market. It gives greater profit than any other red variety in the station grounds.

Mr. Charles Mills, of the same State, says:—

My main crop was Tyler and Gregg for black, Cuthbert and Marlboro for red. The Tyler gives a large picking on the start and keeps good size throughout. The Gregg lengthens out the season, following close after the Tyler, with its large berries which sell at sight. It is not a large yielder nor quite firm enough to ship well. Some of its seedlings will soon take its place.

The Marlboro is doing better than at first. It produced a good crop early, and its good looks sell it, but quality or taste is not there, but it sells—that's the point. Cuthbert is our best red yet. Thompson may take the place of the Marlboro. I hope to test it next year. The disease which I have named black blight in black raspberries has done some damage. It, some seasons, kills many of the bushes. I have never seen a remedy or a cause for it yet. I find, if let stand, it completely kills the bush, but if cut out, leaving only the roots, they will sprout, grow up again with but one year lost. I prefer to set both red and black raspberries in the fall. I set red raspberries with good results in damp weather, any time from March to November. In setting green wood cut back well. Fall-set plants I give a forkful of manure on the plant in the fall, or soon as the ground freezes, then in the spring remove the manure and go over the piece often and see that every plant is alive. By adopting this plan, I am satisfied I double my first crop, over spring setting. It is impossible in the spring to set black raspberry plants without breaking off many of the sprouts. Set your plants in the fall and then you know what plants you have to sell to the earliest spring planters.

Mr. E. J. Brownell, recapitulating his year's experience in the *Orange County Farmer*, says:—

In black caps I have yet to find a better sort, all things considered, than the Ohio. As I have before said, I should not feel it a great deprivation if I were obliged to confine myself to this one sort alone. Ripening as it does within a few days of the earlier sorts, it will, if properly and thoroughly fertilized with all the manure needed to bring it to its best, continue to bear nearly as late as any of those kinds especially recommended for lateness.

In fact, under favorable conditions, it is a very marvel of productiveness, and I have never seen any other raspberry that for healthfulness or vigor or plant-bearing qualities and everything considered, would equal it.

The Souhegan (or Tyler, which I believe to be identically the same, having both sorts from the first disseminators of each), which was so loudly vaunted as superior in hardiness and vigor of plants, and which would perhaps compare well in this respect with most of the older kinds, is certainly lacking in both vigor and productiveness as compared with the Ohio, while in size of fruit especially, unless the land is unusually rich, it is quite inferior.

There is but one point, it seems to me, in which there is any possible advantage in the planting of these varieties, that is, they will begin to ripen a very few days earlier than the Ohio, and still even then I have found that our first full picking is composed very nearly as largely of the latter as of those so-called earlier sorts.

The Gregg is later than the Ohio, but with us here it lacks in hardiness, and unless the season is unusually favorable as regards extremes of cold, it is unreliable. Then, too, it has a way of a portion of the bushes which in spring seem to start out with vigor and promise well for a fruit crop, drying up and dying off after the berries are formed and even half grown. Whether this is owing to impaired vitality on account of lack of hardiness in the plants, or some other cause, I am unable to say, but one thing I am sure, that it is a failing from which Ohio is largely exempt.

The Nemeha, for which a claim of superior hardiness as a late sort is made, has not with me sustained that claim. If it is in any way superior to Gregg I have not been able to prove it on my grounds, and I would not affirm that it is not identical with that sort.

I had my plants of Nemeha directly from the originator, so I suppose them to be true to name, but they certainly are not particularly more hardy here than the Gregg, nor better in any way, so far as I can judge.

In red raspberries, Cuthbert, this year, for the first time since I planted it, now seven years, gave a fair yield on my grounds as compared with other sorts of its class. Whether it is due to some peculiarity of the soil, or from some other cause, it has always lacked here in productiveness.

Prof. Weber, of the Ohio Experiment Station, has been subjecting to chemical analysis the following varieties, viz.: Shaffer, Ohio, Hilborn, Ada and Gregg, and finds that certain varieties are much better

adapted to drying than others. He says :—

The Ohio plainly takes the lead, having more than 16 per cent. of solid matter, but the Ada, Hilborn and Gregg fall but little below it, while the Shaffer takes much higher rank than commonly supposed. From the consumers' standpoint, however, the Ohio is decidedly inferior to all others, containing, as it does, a very high per cent. of seeds—almost half of its solid matter. It is probable that as ordinarily dried, or evaporated, about one-third of the total product is seeds, in case of the Ohio, which puts its food value very low and renders it a costly variety for the consumer to buy. The Gregg, Hilborn and Ada stand much higher, the latter excelling the Ohio in actual value by about 16 per cent. The Shaffer yields but little less profit to the grower, and is decidedly superior to any on the list, in the dried state, to the consumer.

Prof. Weber found the actual product of the dried fruit of the Ohio to average 9 lbs. to the bushel, while the Gregg, Hilborn, Ada and Tyler produced only 8½ lbs., and Shaffer 8.

We notice in another Ohio authority, that another new raspberry is being introduced with "great flourish." It is the Palmer Seedling, the productiveness of which is claimed to be something enormous, yielding at least double the amount that either the Gregg or the Souhegan does ; besides being of stronger growth and very hardy. Time alone will prove all this.

WIND-BREAKS.

MR. L. H. BAILEY, of Cornell University, has been making a study of wind-breaks in their relation to fruit growing, and after considerable investigation, he has published the following conclusions, viz. :

1. A wind-break may exert great influence upon a fruit plantation.

2. The benefits derived from wind-breaks are the following : Protection from cold ; lessening of evaporation from soil and plants ; lessening of windfalls ; lessening of liability to mechanical injury of trees ; retention of snow and leaves ; facilitating of labor ; protection of blossoms from severe winds ; enabling trees to grow more erect ; lessening of injury from the drying up of small fruits ; retention of sand in certain localities ; hastening of maturity of fruits in some cases ; encouragement of birds ; ornamentation.

3. The injuries sustained from wind-breaks are as follows : Preventing the free circulation of warm winds and consequent exposure to cold ; injuries from insects and fungous diseases ; injuries from the encroachment of the wind-break itself ; increased liability to late spring frosts in rare cases.

a. The injury from cold, still air is usually confined to those localities which are directly influenced by large bodies of water, and which are protected by forest belts. It can be avoided by planting thin belts.

b. The injury from insects can be averted by spraying with arsenical poisons.

c. The injury from the encroachment of the wind-break may be averted, in part at least, by good cultivation and by planting the fruit simultaneously with the belt.

4. Wind-breaks are advantageous wherever fruit plantations are exposed to strong winds.

5. In interior places, dense or broad belts, of two or more rows of trees, are desirable, while within the influence of large bodies of water

thin or narrow belts, comprising but a row or two, are usually preferable.

6. The best trees for wind-breaks in the northeastern States are Norway spruce, and Austrian and Scotch pines, among the evergreens. Among deciduous trees most of the rapidly growing native species are useful. A mixed plantation, with the hardiest and most vigorous deciduous trees on the windward, is probably the ideal artificial shelter belt.

MANURING APPLE ORCHARDS.

WHEN apple trees get into full bearing, manure may be applied pretty freely without much danger of making wood growth rather than fruit. The paler green of the leaves in bearing apple trees, as compared with those not bearing, shows the tax on vitality which fruit production causes. It is probably in case of most old trees the inability of the roots to supply food for the present crop, and anything besides that prevents the formation of fruit buds for a crop another year. In other words, if the soil were made rich enough a partial or full crop of fruit might, accidents excepted, be looked for every year. Some apple trees do bear every season, but they are chiefly of the summer varieties, that mature early enough to allow time for the production of fruit buds afterwards.

This is in most eastern localities the off year for apples, and trees are generally fruitless. But this fall is for this very reason the best time to manure these non-bearing apple orchards. Fruit buds are now formed which shall burst into blossoms next spring. A dressing of manure spread on the surface in the fall will work its way through the soil by rains and melting snows the coming winter and spring. Nothing will or can be lost, for apple tree roots go down so deeply that leaching beyond their reach is hardly possible. Not only will the soil be enriched, but it will also be kept moist by the mulch into which the water will sink instead of running off over the surface, as it may on clay soil exposed to beating rains. It is not merely nor chiefly under the trees that manure should be spread. Apple roots extend very widely, and in years ago in digging an underdrain through a rich spot we found roots from an apple tree that grew fully four rods away. Whether the roots extend as widely in every direction we do not know. Probably if not interfered with by other trees they did.

Stable manure is a complete fertilizer for crops that grow mainly to leaf and stalk; but it is not a full manure for grain, and still less for fruit trees. In natural fertile clay soils the carbonic acid gas caused by decaying manure in the soil makes soluble some portions of the inert potash which all clays contain. But even here potash salts or hard-wood ashes will be useful, while on sandy or gravelly soils the addition of potash to stable manure is almost indispensable. Without the potash the manure will make the trees grow more luxuriantly, but without fruiting. Probably it will be as well to postpone putting on the mineral fertilizer until near spring, less from fear that it would leach away, than that it would combine with the soil during the season when carbonic acid gas is largely developed, and thus become insoluble and useless. The potash is most necessary for the fruit at the time the seeds are being produced and the fruit is ripening. Without potash, the change from the

sour and acrid juices of the green fruit to the ripe melting sweetness of the same fruit when ripened would be impossible. Overloaded grape vines often suffer from lack of available potash, when the grapes hang for days and weeks without change upon the vines.

It should be remembered that years ago, when the soil was rich and insect enemies were unknown, apples were the most easily cultivated of all fruits and the surest to produce a crop. They ought to be and may be made so again. With the right proportions of various plant foods properly administered, apple growing ought to be the most certain and successful business known, instead of being, as it has become, the most uncertain. We know now how to destroy or guard against insect enemies, and it only requires the same untiring vigilance which farmers have long learned to use in keeping down noxious weeds to make destructive insects a blessing rather than a disadvantage.—*American Cultivator.*

The Switzer Apple.

The *American Garden* says this apple is the best in quality, as well as one of the most beautiful of the Russians, and the tree is perfection as a grower and bearer. Its "out" is in dropping its fruit permaturely; but this fault has not been noticed this season. It is described as larger than the Fameuse, a bright rose color, free from spotting, and of a Fameuse flavor, corresponding also in season with that apple.

The Value of Fruit Trees.

"A good fruit tree is worth fifty dollars," we heard an old farmer say recently. If this is true, an orchard of one acre containing fifty trees should increase the value of the farm upon which it is situated by the pleasant sum of $2,500—less, of course, the original value of that individual acre. While it might be difficult to find a purchaser who would accept this valuation, my own experience inclines me to the belief that the farmer's assertion was not far from right. A money yield of three dollars per annum from each tree would give six per cent. upon this capitalized value. It is a poor tree that will not average this, even allowing for off years, and off years are not so frequent as to alternate regularly with the bearing ones. A healthy tree, properly cared for, will give a crop two years out of three that will pay for harvesting. Occasionally a tree will give a crop that will pay the interest for many years in one.

An Early Richmond cherry tree paid me last year eight dollars, besides the fruit used at home, which was sufficient to pay entire cost of gathering. From a sweet cherry tree this year I sold three-and-one-half bushels at two dollars per bushel.

Two Chickasaw plum trees, growing so closely together that their branches intertwine as if they were one tree, the two covering a space of about five hundred square feet, frequently pay ten dollars in a season, which would be at the rate of over $800 per acre. A pear tree near by yields ten bushels in a good season, and one dollar per bushel is not an unusual price. Three early apple trees this season gave over fifty bushels, which sold at from eighty cents to $1.20 per bushel. The trees were so full that I had to commence picking while yet very green, to save the limbs from breaking. Yet the same trees last year gave a crop that paid more than six per cent. upon a value of fifty dollars each.—*American Agriculturist.*

Winter Care of Apple Orchards.

No doubt the most successful and profitable orchards in Ohio are those

in which swine are pastured. Hogs give the triple advantage of maintaining fertility, keeping the surface loose and friable, and consuming the falling fruit, thus destroying the larvæ of those ruinous insects, the curculio and codlin moth. Some of our farmers pasture old orchards with sheep or cattle and get fair fruit. Orchards kept in turf, either for pasture or meadows, should have a top dressing of coarse barnyard manure once in two years. This should be applied evenly under the trees, enough to cover the ground as far out from the body of each tree as the roots or branches extend. December is the proper month for this application, as the manure then affords protection to the roots in winter loosens the soil and serves as a mulch in summer, for the preservation of moisture. All things considered, I have, with many years' experience, found this winter application of coarse manure the most satisfactory for any crop, as well as for orchards, on all land where it is not liable to be washed away, and the earlier in winter the application, the better.—H. G. Tryon, Lake County, O.

Root Pruning.

Root pruning may be an unnatural and reprehensible practice, and according to some writers is now almost obsolete, but there are exceptional cases when it answers the purpose of inducing fruitfulness when other devices failed. Particularly is this the case with dwarf apples, which in some instances grow vigorously but refuse to bear, caused, perhaps, by the formation of roots above the dwarf stock. A decrease of vigor is essential to an increase of fruit-bearing spurs, so that it is necessary to open a trench around the specimen, a short distance from the body of the tree, cutting off all roots that show. This operation must be performed whilst the plant is in a state of rest. Summer pinching also assists in the formation of fruit spurs, and the two systems taken together will accomplish the desired end.—Josiah Hooper.

Use of Fruits.

Grape Juice.

Although I have alluded to this in a previous number, there are so many who prefer it to fermented wine that I give here what I consider an improvement in the manner of preparing it. Instead of pressing out the juice from the fresh grapes, I plucked the berries from the stems and boiled them until soft. A little water is necessary in the boiler, or some of the grapes at the bottom may burn before the juice has been sufficiently extracted. When the grapes are quite soft take them out and drain through a sieve. Then press them and boil all the juice until no scum arises. Have bottles ready sufficiently heated to prevent cracking; fill them up full with the hot juice, cork at once tightly, cut the corks off even with the mouth of the bottles and dip them in melted cement. Set them away in a dark place in the cellar, and you have a delicious article of drink, any time thereafter for years. I use half a pound of good white sugar to the gallon of juice, put in while boiling; this is, however, not really necessary but gives it more body. When using it, fill a tumbler half full of juice, fill up with fresh water, and it is simply

delicious and just the thing for the sick or the well. It is just the thing for the strictly temperate folks, and a glassful of it will revive one wonderfully when tired and fagged out. It may be put up in five or ten gallon vessels if well bunged up and sealed, but when such a body is once attacked in warm weather it must be used at once, or it will soon turn into wine and then into vinegar. This boiling the grapes whole seems to give more aroma to it, and makes a superior article.—Samuel Miller *in Orchard and Garden.*

Crystallizing Fruit.

Though no authority on crystallizing fruit, *i. e.*, professionally, there is a simple process for home crystallizing, which I know of. The fruit is dried first. For this the finest fruit is selected. It must be very ripe, then thoroughly dried, and after this "sweated." Then it is dipped in the very heaviest syrup one can make, say that used for candied fruit, which is a gill of water to a pound of sugar. I can give no exact rule for time of dipping—two or three minutes in the hot syrup. Then the fruit is dried again. This process makes a delicious article, and for this reason: The dried fruit without sugar retains all the fruity flavor, and the dipping process after the drying does not penetrate the fruit so as to destroy that fine and natural flavor, but merely adds to it the taste of the sugar crystals which are formed on the surface. It is unnecessary to say that the very best granulated sugar should be used. I might add that some confound crystallized fruit with sweetmeats or candied fruit. As I understand the matter, the difference between them is this: For the former the fruit is dipped in the syrup after being dried, not cooked in it, while for the latter the fruit is cooked, slowly and carefully, in the heavy syrup, and then dried.—*Good Housekeeping.*

Horticultural Miscellany.

Ornamental Hedges.

I have recently seen in one of our best horticultural journals all ornamental hedges condemned. I cannot agree with this. The Scarlet-flowering Quince makes a fine hedge; the Lilac is also good, but best of all is the Bush Honeysuckle. It does well in spite of abuse, if given half a chance. If a bush gets killed back, it is up again within two months, and stout as ever at the close of the season. The flowers are lovely and the berries equally so. The robins eat theberries in preference to raspberries.

The Japan Quince is superb in blossom. These are white, red and pink flowering. So of the Tartarian Honeysuckles you will be able to procure red, pink and white flowering ones.

Another ground screen or hedge may be made of Catalpas cut down and grown as bushes. They will blossom superbly at three or four feet high; and in July make a very beautiful display. Set them six feet apart. The Ribes make pretty, small hedges, showing finely in early May. The list of good shrubs for hedges is quite long. Of course, these ornaments need care, and as a rule, *all* hedges tend to become ugly if neglected.—E. P. Powell *in Popular Gardening.*

The Best Fertilizer.

THE fertilizer that every one engaged in small fruit culture should use, and that extensively, is a judicious mixture of brains and elbow grease. And it must be used in the field, and manufactured on the spot. It is of little value without it is applied every day and every hour in the day, from five o'clock in the morning until nine at night during the growing season; in this way it is as efficacious as a patent medicine; it will develop the plants and kill the weeds; it will keep the ground loose and clean and destroy the insects and worms; in short it will make a success when everything else will fail. Try it.—L. H. WILCOX *before Minnesota State Hort. Society.*

Orchard Care.

You must keep an eye on your orchard. Never trust to providence and your hired hand, for a careless hand will do more damage in an orchard than he will do good. Keep all tramps out of the orchard that are around after jobs of pruning. Let no man prune in your orchard without you know he is a skilful hand at the business. Wrap your trees early in the fall to keep the rabbits from barking the trees. The best material to use is screen wire. It will keep the borers and mice away from the trees as well as the rabbits. The wire will cost about twenty-two cents per yard, and one yard will make five guards.—MR. SCHULTZ *before the Missouri State Hort. Society.*

Heating a Small Greenhouse.

MY house is a span roof 15 feet square and 10 feet to pitch. It is heated by two oil stoves with two three-inch burners each, and it is very seldom necessary to light more than two burners. Over each stove is a galvanized iron boiler holding about three gallons, and without cover. I use the best refined oil and have never noticed any smell in the house. The stoves burn from 10 to 12 hours without any attention. A small boiler heated by oil stoves I think would pay manufacturers, as in the south we do not need any costly heating apparatus used at the north. Hot water is the best for heating.—E. B. HOLLINGS, S. C.

Winter Mulching of the Strawberry

WHEN fall comes, cover your plants. If you can get prairie hay it is better than anything else, as it is generally cleaner than straw. Sometimes there are foul seeds, which are liable to seed your bed. I wait till the ground is frozen. Don't put on too thickly, as you are liable to smother the plants. When the spring comes you mustn't be in too much hurry to uncover. The ground freezes and thaws and often throws out the plants or breaks the roots. In either case the plants are ruined for that season. Leave the covering until all danger is past, then remove it, except where there are bare spots. If I find any weeds I pull them out, and then put on a coat of fine manure or ashes at the rate of 75 to 100 bushels per acre. When they are about ready to bear, men have come to me saying that their plants were not going to have any fruit. The Wilson will always bear—indeed, if you have the true Wilson, it is bound to produce fruit as surely as the Canada thistles will propagate themselves. During the more than 20 years that I have been cultivating them I have never seen, either upon my own grounds or elsewhere, a good, strong, healthy Wilson plant that was not loaded with fruit. I have known some other varieties to partially fail and other kinds where the failure would be complete.—HON. J. M. SMITH, *President of the Wisconsin Hort. Society.*

The Erie Blackberry.

Mr. T. Greiner says in *Rural New Yorker* :—

I am quite certain the Erie is distinct from the Lawton, but greatly doubt whether it is very much better. It is the same strong grower, and, if anything, more productive. The berry differs but little in quality, but is plumper or rounder in shape. The cane is exceedingly thorny, apparently healthy and hardy in New Jersey. Its greatest fault is one which it has in common with the Lawton, perhaps even in an intensified degree, namely, that of turning red and appearing stale or in the first stages of decay, very soon after being picked. A few hours' standing renders freshly-plucked, luscious fruit in the baskets so exceedingly unattractive as to be unfit for sale, and I have known the greater part of a crop left on the bushes to go to waste merely on account of the unwillingness of buyers to accept the ill-looking stuff.

Quinces Useful and Ornamental.

If I should plant an orchard I would set mostly the Orange variety, with, perhaps, one-fourth Meech's Prolific, and one or two Champion. The latter is quite late in ripening, and the fruit can be kept until New Year's. Rea's Mammoth does not yield any more or nicer fruit than the Orange, as far as I can learn. I have not tried the Meech, but from what I can learn it is a very fine strain of the Orange, and by proper pruning and cultivation can be grown to the highest perfection possible with this fruit. — *Vick's Magazine.*

The Juneberry (*Amelanchier*).

In my notes in 1882 I spoke of several dwarf varieties in the hands of Germans in the Western States. I have fruited four varieties, received from Iowa Agricultural College. Last summer the little bushes, from nine inches to two feet in height, bore an abundant crop of berries, the size of the largest Saguenay blueberries, and richer in flavor. I think Grinnell was the finest in flavor, Green County and Gardener being also good fruits. The Alpinum of Mexico, though quite hardy, does not bear as large or as fine a flavored berry.—Chas. Gibb, *Montreal.*

Early Strawberries.

At a recent strawberry meeting the point was made that by heavily summer mulching a late variety the season can be prolonged a week. The converse of this proposition is true, and by not mulching early varieties the greatest earliness can be obtained. I am creditably informed that this fact is to be made use of the coming season to boom a new variety for earliness. Grown beside the May King, the latter heavily mulched, a variety, no earlier than that early variety, could be advertised as a week earlier, and inexperienced growers induced to buy plants without suspecting the trick made use of to sell them.—L. B. Pierce, in *Ohio Farmer.*

Liquid Grafting Wax.

For painting the wounds made in pruning trees and for similar purposes this is one of the best, and may be made by melting one pound of resin over a gentle fire and stirring in one ounce of beef tallow. When the mixture, after being removed from the fire, has cooled off somewhat, eight ounces of alcohol are to be added to it. When cool put it in bottles or cans and keep well closed.

The Vegetable Garden.

Culture of Asparagus.

Extract of Paper read by Chas. W. Garfield before the Michigan State Horticultural Society.]

A RICH sandy loam—a piece of ground to grow 75 bushels of shelled corn per acre—well drained, makes a good beginning for an asparagus field. I prefer to grow the plants, sowing the seed early. Plants are set three feet apart, in rows four feet apart, but five feet is a better distance.

Two men can plant an acre in half a day, setting the crowns of the plants five or six inches below the level of the soil. It takes about 3,000 plants to the acre, in four feet rows. When the planting is completed, the lines of plants will be in the bottom of the furrows, which need not be filled at once, but during the season cultivation will gradually level the soil, and the process of weed extermination is greatly aided by leaving the furrows open at the outset. Clean cultivation is given during the growing year, and in October the tops are mowed off and burned. The expense of growing asparagus is about $100 per acre, up to the second spring after planting, and results in a net profit of $100 an acre, which is not a large profit when the time required to get the plantation into bearing, the investment and the skill, are considered.

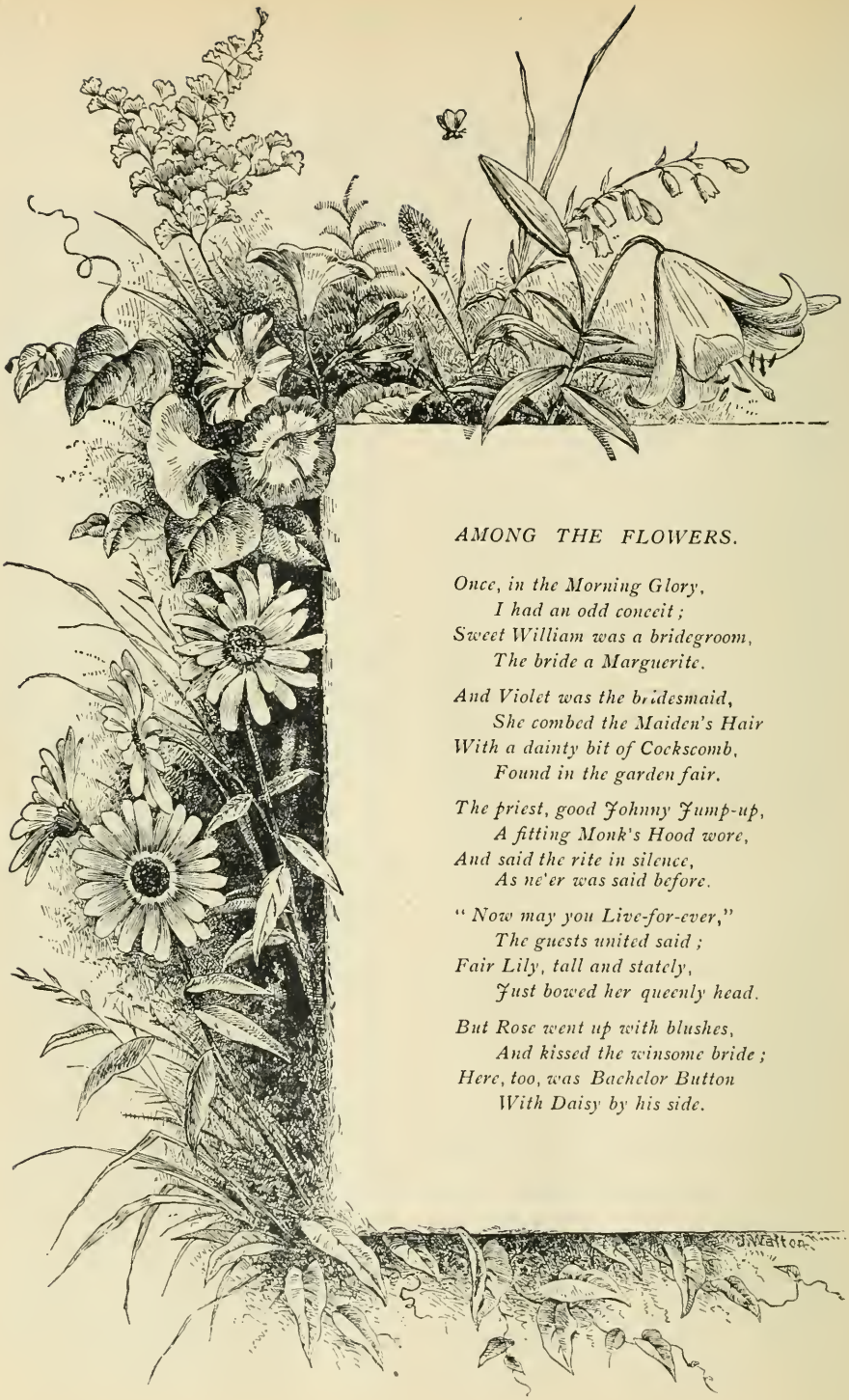
The great advantage is that the work and the money come in early, at a time when the farmer does not interfere with other duties. The cut-worm is the worst insect foe, but by stirring the soil in the spring and autumn plowing, its ravages are considerably reduced. The shoots are broken off when gathering, instead of cutting. The ends are squared with a knife after bunching; and rubber bands are used for bunching. The plantation should not be weakened by too prolonged cutting.

Two exigencies have materially reduced profits with me. First, untimely frosts, which may in one night destroy a full picking, which upon an acre may mean from twelve to twenty dollars. To avoid this I contemplate giving a surface dressing with shavings manure in the spring, which can be hauled over the shoots, which are just breaking the earth, in an emergency, at slight cost, and save the picking.

Second, a dry, hard wind sometimes arises when a cutting of asparagus is nearly ready. The sand blown against the tender shoots punctures the epidermis and checks growth on that side. In a few hours the shoots will turn over and be so unshapely as to be unmarketable.

Keeping Celery.

SOME gardeners preserve their celery for winter by banking it up in the rows where it grew, throwing a covering on each side up to the tips. This is the least trouble, but it may be frozen in just at the time when it is most needed for market. The better way is to store it in trenches, where it may be taken out at any time. A trench is dug in a dry place, a foot wide and as deep as the plants are tall, the length being suited to the quantity to be stored. The celery is set in this in rows across the trench, and setting the plants close to one another. As cold weather increases the celery is covered with leaves, or marsh hay, and finally with earth. The use of short boards over the litter will facilitate getting out the celery if there is a heavy fall of snow.—*American Agriculturist.*



AMONG THE FLOWERS.

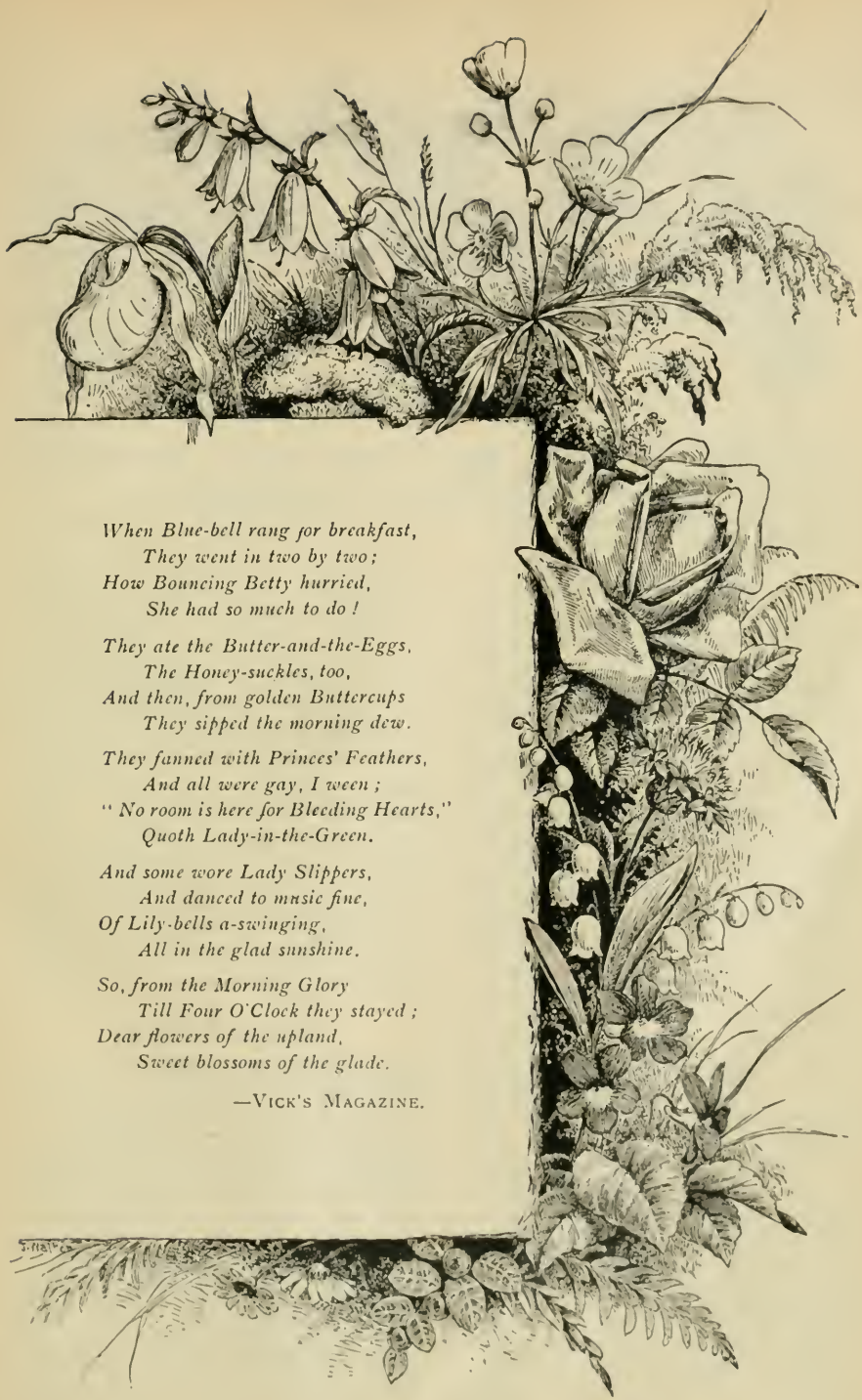
Once, in the Morning Glory,
I had an odd conceit;
Sweet William was a bridegroom,
The bride a Marguerite.

And Violet was the bridesmaid,
She combed the Maiden's Hair
With a dainty bit of Cockscomb,
Found in the garden fair.

The priest, good Johnny Jump-up,
A fitting Monk's Hood wore,
And said the rite in silence,
As ne'er was said before.

"Now may you Live-for-ever,"
The guests united said;
Fair Lily, tall and stately,
Just bowed her queenly head.

But Rose went up with blushes,
And kissed the winsome bride;
Here, too, was Bachelor Button
With Daisy by his side.



When Blue-bell rang for breakfast,
They went in two by two;
How Bouncing Betty hurried,
She had so much to do!

They ate the Butter-and-the-Eggs,
The Honey-suckles, too,
And then, from golden Buttercups
They sipped the morning dew.

They fanned with Princes' Feathers,
And all were gay, I ween;
"No room is here for Bleeding Hearts,"
Quoth Lady-in-the-Green.

And some wore Lady Slippers,
And danced to music fine,
Of Lily-bells a-swinging,
All in the glad sunshine.

So, from the Morning Glory
Till Four O'Clock they stayed;
Dear flowers of the upland,
Sweet blossoms of the glade.

—Vick's Magazine.

The Canadian Horticulturist.

SUBSCRIPTION PRICE, $1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

The End of the Year.

With this month we close another volume of the journal, conscious that it is in many respects imperfect, but trusting at the same time that it has been the means of stimulating Ontario fruit growers to greater zeal in their chosen line of industry. We trust also that its visits have somewhat increased the interest in floriculture of our lady readers; and we hope to give greater attention to this department in the next volume.

We ask all who have appreciated the efforts made through this journal, to interest and profit them, will lose no time in sending in their renewal subscription, and that of as many new friends as possible, because we wish to know how many copies of January number to print, and how many test plants and trees to order for distribution.

Photographs of fruits, flowers, country homes, lawn views, etc., are solicited for engraving. If desired they will be carefully returned when copied. It is our intention to use such illustrations more liberally in the year 1890 than ever before.

Pear Triomphe de Vienne—a sample of which was sent us by Mr. W. Holton, of Hamilton, last fall is thus spoken of by the editor of the *Gardener's Chronicle* :—"I cannot help thinking that this pear, when better known, will become a general favorite. With us it is one of the heaviest croppers on standards. The fruit grows to a good size, is of a russety color, sometimes streaked with dull red on the sunny side. The flesh is exceedingly melting and full of honeyed sweetness. In addition to the above good properties, it comes in at a season when sometimes a gap occurs, viz., just after Williams' Bon Chretien is over, and it will keep good for a long time after being ripe."

Keeping Tomatoes.

A writer in the Fruit Growers Journal is experimenting to keep tomatoes in a fresh state for winter use and spring sale by packing them in dry sand. Up to first of November they were in a state of perfect preservation, and if they will keep in this way until a good market opens for them, then it will pay to pack them by the barrel, instead of selling them at low prices in the fall. The process is thus described :—

I first dried the sand thoroughly, then cut the tomato from the vine

(just as it changed from green to white and pink) leaving a portion of the stem attached. In the bottom of the box I placed a thick layer of sand; then on this a layer of tomatoes (the flat ends down, and taking care they did not touch each other in any way), and then another layer of sand, so thick as to entirely cover the tomatoes and stems, and so on until the box is filled. Nail up and place in a dark, dry place.

The attachment of the stem seems to be very essential for perfection in ripening, as those tried without have a shriveled appearance.

Woolly Baldwins.

Mr. Rivers, Vice-President of the British Fruit Growers' Association, in a speech before that Association quite recently, said that he hoped before long their markets would be so well supplied with apples of such good quality that their very good friends, the Americans, would be compelled to consume their flat, tasteless, and woolly Baldwins amongst themselves. They should not want them here. There is no doubt that the productiveness of the Baldwin, and its fine color, have united in causing it to be planted in much larger quantities than its quality will warrant. But if this is so, what shall we say of the Ben Davis, the great market apple of the west, which, even according to its best Canadian friend, Mr. Dempsey, of Trenton, needs flavoring with lemon juice to make it palatable.

Edible Fungi.

Mr. P. Weathers writes in the *Gardeners' Chronicle* on this subject, and gives a list of four species of *Agarici*, including of course *Agaricus campestris*, the common mushroom, and the following in addition: *Coprinus comatus*, *Marasmius oreades*, *Boletus edulis*, and *Lycoperdon giganteum*, all of which are edible at certain stages of growth, at least, and counted great delicacies by some.

The last mentioned, *Lycoperdon giganteum*, is the giant puff-ball, often looked upon by us in Canada as poisonous. He says of it: "For cooking the puff-ball should be gathered while young and snow-white color, finely sliced, and fried with butter, with a flavoring of pepper and salt; when cooked in this manner the dish will compare favorably with many of our most expensive dishes. This fungus has other qualities besides that of being edible; the spongy portion of it can be made into tinder, which, when burned, is used as a narcotic, and the dust of it is very useful for healing wounds.

QUESTION DRAWER

Varieties of Small Fruits.

86. Will you kindly inform me which is the best sort of strawberries, also currants and raspberries for market purposes.—S. Kemp, *Hawksbury.*

It is not easy to give advice concerning the varieties best suited to a distant locality; but would commend the Tyler, Ohio and Gregg for black raspberries; and Marlboro and Turner for red. Of currants, for market the Fay and the Cherry are the most profitable, both on account of ease in picking and the ready sale which these varieties command.

In strawberries, in spite of the many new and wonderful varieties being introduced, we are not yet able to say whether any "have come to stay" or not. In the mean time plant for market Crescent on sand, and Wilson in clay loam, and plant enough of the new varieties for experiment.

The Russian Apple Trees.

87. I send for this day's post two apples from the Russian tree received from the Society. I may say that the tree is exceedingly healthy and vigorous as well as perfectly hardy; not even the terminal buds suffered.—W. W. HIGGINSON, *Hawksbury.*

The Russian trees referred to were seedlings, sent out without name, and consequently nothing could be said of the kind or quality of the fruit they would produce. Their only point of excellence was their hardiness, in which respect these appear to be all that could be wished. The size and color of these samples compares favorably with the Greening, but the quality is inferior.

OPEN LETTERS.

Dominion Convention of Fruit Growers.

SIR,—In response to an application from the Provincial Fruit Growers' Associations, the Dominion Government has granted an appropriation to aid in the extension and development of the fruit growing industry in Canada.

A Convention of the Fruit Growers of the Dominion will be held in the City of Ottawa, February, 1890. Delegates will be present from the various Provinces, and a programme will be prepared upon subjects of general interest.

Prizes to the amount of $400 will be offered for dried, preserved, and late-keeping varieties of fresh fruits.

Special railroad and hotel rates will be obtained for those desirous of attending.

Schedules of prizes and programmes of proceedings will be issued at an early date, and may be obtained from L. Woolverton, Secretary Ontario Fruit Growers' Association, Grimsby, Ont.; C. R. H. Starr, Secretary Nova Scotia Fruit Grower's Association, Port Williams, N. S.; A. H. B. Macgowan, Secretary British Columbia Fruit Growers' Association, Vancouver, B.C. or W. W. Dunlop, Secretary, P. O. Box 1145, Montreal.—*Montreal, Nov.*, 1889.

OUR FRUIT MARKETS.

OUR home markets have been a little fitful owing to the plentiful supply coming in from certain localities, but on the whole there is a constant demand, and prices for first class apples are from about $3 upwards. The export trade in apples from the Atlantic seaboard to Great Britain, including the ports of New York, Boston, Montreal, Halifax and Annapolis, have amounted to 261,176 bbls. to date of Nov. 9th. Last season to same date the amount was 553,456 bbls.

Liverpool.

SIR,—Apples from your side are being forwarded on a very limited scale and prime stock of every description meets with a very ready sale, and this class we can recommend shipping. We quote: Baldwins, 15s. to 18s. 3d.; Greenings 14s. 9d. to 18s.; Kings, 23s. to 26s. 6d.; various, 13s. 3d. to 20s. 6d. Market steady with a continuance of limited supplies. Prices will be sustained. Waiting your favors, yours faithfully, WILLIAMS, THOMAS & CO.

Edinburgh.

SIR,—The markets here and in Glasgow are maintaining prices of Canadian apples with a tendency to firmness for the finer parcels, the prices quoted in your last issue being fully maintained up to this date.

In this market, careful and honest regular packing is essential to good results.

There is, at present, a scarcity of color which we should be pleased to see supplied.

There has indeed been a fair supply of Danish Gravensteins, but though color is beautiful, the flavor is very deficient.

The Danes have shown remarkable energy this season, shipping their fruit in American style, also in cases of from 60 to 130 pounds net, and as it has met with a very fair market, they will no doubt be stimulated to greater efforts in the future.

Packing with them has been made a special feature, so much the more necessary does it become for our Canadian friends to attend to this *vital* point.—We are, sir, yours respectfully, WOOD, ORMEROD & CO., *Edinburgh, Oct.* 21, 1889.